A training impact evaluation of the Higher Education Programmes: A case study of the Elsenburg Agricultural Training Institute

by

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DECLARATION

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ABSTRACT

This study was conducted to assess the training impact that the higher education programme at the Elsenburg Agricultural Training Institute (EATI) has made towards the employment of the 2009 to 2013 graduates. An important objective of this study

was also to ascertain whether there was any difference in the employment of Previously Disadvantaged Individuals (PDIs) and non-PDIs. The main question was therefore whether the knowledge and skills development of the graduates has added value to their lives regarding employment within the agricultural sector.

The study furthermore aimed at evaluating the quality of the Higher Education programmes of the EATI, by evaluating the perceptions of graduates and the management team of the EATI. Subsequently, a Monitoring and Evaluation (M&E) tool was proposed to monitor the outcomes in future and assist with future impact evaluations at the EATI. The output, which is currently the preferred method of reporting, does not indicate the difference that the interventions may make to beneficiaries' lives and therefore the need for the evaluation tool.

A triangulation approach was utilised to gain insight into the status of graduate employment as well as the Quality Assurance (QA) and M&E systems employed at the EATI. The reason for this approach was to add substance to the future outcome evaluations and possibly assist with governance at the EATI. With a low graduate response to the study, the mixed-method approach was deemed appropriate for this study.

A number of findings were incorporated into recommendations, with the most important finding being that responding graduates are generally employed in the agricultural sector, but have a concern regarding promotion and career advancement.

With the findings obtained, the Balanced Scorecard (BSC) was proposed as an M&E tool and the recommendations were made according to the findings and subsequently incorporated into the structure of the proposed BSC.

OPSOMMING

Hierdie studie is gedoen om vas te stel watter impak die hoër-onderwysprogramme van die Elsenburg Landbou-opleidingsinstituut (ELOI) gehad het op indiensneming van die 2009 tot 2013 gradueerdes. 'n Belangrike doelwit van die studie was ook om vas te stel

of daar ‘n verskil in die indiensneming van voorheen benadeelde (VBI) en nie-voorheen benadeelde (n-VBI) individue bestaan. Die hoof vraag was dus of die kennis- en vaardigheidsontwiklkeling van die gegradueerdes, waarde toegevoeg het tot hul lewens ten opsigte van indiensneming in die landbousektor.

Die studie het verder beoog om die gehalte van die Hoër Onderwys (HO) programme te evalueer, deur die persepsie van die gegradueerdes en bestuurspan van die ELOI te evalueer. Daarna is ‘n monitering en evalueringsinstrument (M&E) voorgestel om in die toekoms die uitkomste te monitor en te help met toekomstige impak evaluerings. Die huidige verkose metode van rapportering, in die vorm van uitkomste, dui nie die verskil aan wat die intervensie ten opsigte van die begunstigdes se lewens maak nie en daarom die behoefte aan die evalueringsinstrument.

‘n Trianguleringsbenadering was gebruik om beter insae te verkry ten opsigte van die status van gegradueerdes se indiensneming sowel as die kwaliteitsversekering- (QA) en M&E-sisteme wat by die ELOI gebruik word. Die rede vir hierdie benadering was om substansie te verleen aan toekomstige evaluerings en om moontlik by te dra tot die bestuur van die ELOI.

‘n Aantal bevindinge is in voorstelle inkorporeer, met die mees belangrike bevindinge dat reagerende gegradueerdes oor die algemeen binne die landbousektor in diens geneem word, maar dat hulle ‘n bekommernis het ten opsigte van bevordering- en loopbaan vooruitsigte.

Met die bevindinge wat verkry is, is die Gebalanseerde Telkaart (BSC) voorgestel as ‘n M&E-instrument en aanbevelings is na aanleiding van die bevindinge gemaak. Die aanbevelings is daarna in die struktuur van die voorgestelde gebalanseerde telkaart ingevoeg.

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ABBREVIATIONS

EATI: Elsenburg Agricultural Training Institute
M&E: Monitoring and Evaluation

QA:	Quality Assurance
PDI:	Previously Disadvantaged Individual
BSC:	Balanced Scorecard
NQF:	National Qualification Framework
SAQA:	South African Qualifications Authority
AET:	Agricultural Education and Training
NDP:	National Development Plan
HE:	Higher Education
ATI:	Agricultural Training Institute
CHE:	Council on Higher Education
RSA:	Republic of South Africa
HET:	Higher Education and Training
ETQA:	Education and Training Quality Assurance
HEQC:	Higher Education Quality Committee
IE:	Impact Evaluation
TIE:	Training Impact Evaluation
OE:	Operational Evaluation
DPME:	Department of Planning, Monitoring and Evaluation
NDP:	National Development Plan

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CHAPTER 1:
OVERVIEW OF THE STUDY

1.1 BACKGROUND AND CONTEXT OF THE STUDY

The Elsenburg Agricultural Training Institute (EATI) is an accredited agricultural college and is situated in the Western Cape as part of the Department of Agriculture as a full programme and chief directorate. It is the only one of its kind in the Western Cape and therefore serves a widespread and diverse area.

The history of the EATI dates back to 1898, when it was established as the first agricultural college in South Africa, offering a one-year diploma (EATI, 2015:6). In 1926 the EATI amalgamated with the University of Stellenbosch and presented a two-year diploma course aimed mainly at prospective farmers. Since then many changes occurred, the most important of which is the breaking of the then 47 year relationship with Stellenbosch University in 1973. From there the Department of Agriculture was primarily responsible for training at the college.

In 1994 the Elsenburg College was amalgamated with the Kromme Rhee College of agriculture and was made the responsibility of the newly created Western Cape department of Agriculture, a provincial department. The focus of these two colleges was different, as the Elsenburg College were for the mainly Caucasian racial grouping and the Kromme Rhee College for non-Caucasians. The Elsenburg College therefore historically catered for the farmers and the Kromme Rhee College the farm workers. This alone posed challenges with programme development and the alignment to serve agriculturists from various backgrounds.

In order to diversify its offerings, the EATI again initiated an association with the University of Stellenbosch in 2004 to co-present the Bachelor in Agriculture (B.Agic.) degree. The EATI thus had three higher education programme offerings that could satisfy the need from various spheres of society. The three programmes is the three-year B.Agric, a two-year Higher certificate (HC) and a one-year Diploma. The diploma is a higher qualification and follows after the HC. The B.Agric is on National

Qualification Framework (NQF) level 7 and the HC and diploma on 5 and 6 respectively.

The named qualifications have different outcomes. The HC is aimed at equipping students to become technicians with the following diploma to equip the students to be supervisors and technical experts. The B.agric. in turn aims to equip graduates to become technical managers as the programme also includes agricultural management modules. With these aims, the overall mission and vision of the EATI was formulated.

The following section will expand on the EATI's vision and mission as well as the background that prompted the interest in this study.

1.2 THEORETICAL ORIENTATION

There are approximately eleven agricultural colleges in South Africa that are accredited to offer specific qualifications within the National Qualification Framework (NQF). Even though the qualifications are accredited and coordinated by the South African Qualifications Authority (SAQA), Quality Assurance (QA) specific to agricultural training is not organised as a sector (RSA, 2005:8).

With this study on the Higher Education (HE) programmes of the EATI, it is important to conduct the study within the realm of general HE. The reason for this is that the guiding documents for QA within agriculture are based in HE. It is important to note that legislation pertaining to HE includes a system of QA which mainly focusses on the facilities, curricula, and academic excellence.

Therefore, as a government institution, the EATI is compelled to make sure that QA as per SAQA guidelines is adhered to (CHE, 2007:3). Also, a Monitoring and Evaluation (M&E) system should be active and outputs and outcomes should be reported which are reliable and valid. A Quality Assurance unit, which should include M&E, is on the organogram of the EATI but seemingly not active.

Furthermore, the student profile of the EATI has significantly changed over the past 10 years and student accessibility improved, but some challenges remain. Under very challenging conditions (Ross, 2016:180), a number of PDIs graduate annually and enter the job market with high hopes of creating a better life for themselves.

In cognisance of the challenges that students face, the importance of the South African constitution is noted. The constitution of the Republic of South Africa states that "Everyone has the right to further education, which the state, through reasonable measures, must make progressively available and accessible (RSA, 1996:1257)." In the context of agricultural training, this is even more important, as indicated by the AET (agricultural education and training) strategy that was published in 2005 (RSA, 2005:5).

The AET strategy highlighted the fact that previously disadvantaged individuals (PDIs) had difficulty accessing specifically the 11 agricultural colleges that are accredited within the educational framework, due to various barriers (RSA, 2005:5). Barriers mentioned include "affordability, admission requirements, physical distance from training centres, literacy and numeracy and language of instruction" amongst others (RSA, 2005:5).

Therefore, in the Performance Auditing Business Plan of the EATI (EATI, 2013:3) it is stated that:

> Structured Agricultural Education and Training seeks to promote and to prioritise Human Capital Development in the Department of Agriculture and it remains as an essential vehicle for promoting transformation and is furthermore vital for attracting new entrants to the agricultural sector.

The mandate of (agricultural) training is reiterated in the National Development Plan (NDP) which indicates that education is part of the solution towards poverty alleviation and reducing inequality in the Republic (RSA, 2011c: 262). The EATI was prior to 1994 mainly a college that catered for the farmers who were of the Caucasian racial grouping. It is therefore important to analyse the progress the institution has made regarding training and whether it has impacted positively on the personal well-being of its clients, specifically its PDI graduates since then.

With the author's experience within agricultural training, there is the perception that the PDIs are not afforded job opportunities within the formal agricultural industry and seek jobs outside agriculture. The mission and vision of the EATI specifically seek to address the challenges as indicated (EATI, 2013:3):

> **Mission:**
>
> To promote sound, integrated managerial and skills training in agriculture with advanced specialisation in area specific fields of excellence informed by industry and societal needs.
>
> To provide quality, professional and practical training informed by contemporary research through a market-orientated approach in a development context.
>
> **Vision:**
>
> The vision is the advancement of the EATI as an agricultural and educational centre of excellence to the benefit of the broader community.

This study was therefore necessary to ensure that progress is evaluated towards this stated vision and mission, as no similar recorded study was conducted in the past 15 years. The rationale for this study was furthermore that agricultural training has such a vital role to fulfil in the goal towards poverty alleviation, skills development and the eradication of inequality, that it is of utmost importance to know that its outcomes and impacts are achieved.

One of the concerns is also that the EATI may not have a functional Quality Assurance (QA) programme that is responsible for M&E within the institute and therefore a limited base for expansion of its educational offerings. Currently outputs are reported as numbers and this does not satisfy M&E criteria.

1.3 RESEARCH PROBLEM AND OBJECTIVES

Based on the institutional background, the aim of the study was formulated to evaluate the impact of the EATI's higher education programme in realising its programme goals, which specifically aims at producing graduates that can contribute to economic development in their communities and in broader society (EATI, 2013:16). The research problem therefore is that, without an active QA system, the EATI cannot track

its graduates and subsequently the quality of its programme offerings. This implies that the employment of the EATI's graduates is not known, therefore the impact of the training programmes on the graduate's lives. The study would therefore serve as baseline data towards the development of an M&E tool of which quality assurance is indicated as an important aspect of attaining these goals.

The objectives of the study were therefore firstly to assess the impact that the higher education programme at the EATI has made towards the employment of the graduates in agriculture. It was considered feasible to include graduates from the past five years from 2008/9 to 2012/13 by means of an outcomes assessment, comparing PDIs and non-PDIs. This would be done mainly regarding employment of graduates and whether the knowledge and skills development have added value to their lives regarding work opportunities within the sector. The comparison would give insight into the agricultural sector and how the sector is employing the graduates, seeing that it is such a small community.

Secondly, the data gathered would assess the perception that the graduates have regarding the quality of the training programmes. QA is important to ensure that programme outcomes are met. This is deemed important by the researcher, as QA is an area where the EATI is seemingly lacking. The use of a QA is also important to gather data for a successful M&E system, as discussed in chapter 3 of this study.

Thirdly, the data gathered in the outcome assessment (impact evaluation) would be used to design an M&E tool to monitor the outcomes of the EATI, as the current focus of reporting is output-based, therefore numbers. Outputs do not indicate the difference that these interventions may make to beneficiaries, and there is no evaluation tool at the EATI that can monitor these outcomes on ongoing bases. This would give substance to future impact evaluations and help to keep the management of the EATI updated on the institute's progress towards reaching its goals in a substantive manner.

1.4 RESEARCH DESIGN AND METHODOLOGY

A survey was suggested to conduct the training outcomes study, which is discussed extensively in chapter 4 of this study. An impact (outcomes) study has not been recorded at the EATI for the past 15 years and the survey would be appropriate to give a broad overview of the current state of affairs regarding graduate employment as discussed in the objectives.

The research design hence focussed on the impact that the training programme at the EATI had on the PDIs as well as on the non-PDIs, being directly or indirectly, intended or unintended. The rationale behind this was that most students embark on their tertiary education career directly from school. This would imply that they do not necessarily have a history of employment and acquired skills, which would give an indication that these graduates embark on the quest for employment with the skills that they acquired at the EATI. The design would hence focus on the impact that the training programmes at the EATI had on the graduates.

Currently the EATI has three accredited Higher Education Programmes and all of them have been included in the study. The study therefore focusses on students who obtained their qualifications in Higher education at the EATI from 2009 until 2013. The contact details of all the students are captured on the database of the EATI on students' registration numbers and the researcher had permission to access the information. The population size is 555 and a probability proportionate to size stratified sampling approach was followed. The total size of the population, 555, is very low and therefore a sample size of 20% was used. The sampling was done using SPSS computer software and the profiles of students matched accordingly. The sampling method is explained in more detail in chapter 4 of this study.

The impact assessment model on which the study was subsequently based, was the rapid assessment ex-post impact evaluation. The reasoning behind this choice, as described in detail in chapter 4, was that no baseline data was available and therefore only study groups that were affected by the intervention could be evaluated.

The method used relies on the concept of triangulation to compare the quantitative and qualitative data as well as information available from secondary sources (World Bank, 2004: 24). This mixed method approach are thus used for the purpose of adding

substance to understanding and corroborating the data and discussed in more detail in chapter 4.

1.5 OUTLINE OF CHAPTERS: RESEARCH FRAMEWORK

This study was divided into chapters outlining the research framework as follows:

Chapter 1: Overview of the study: background and rationale

This chapter provides the background and context of the EATI as study unit. This is done by providing the context in which the EATI functions as government entity, as well as the composition of its HE programmes. The institutional background is presented as theoretical orientation to the study, which is used as basis for the research problem on which the objectives and aims of the study are based. Subsequently the research design and methodology are outlined and the research framework provided.

Chapter 2: Theoretical framework for agriculture in HE

This chapter focusses on Quality Assurance (QA) in HE in the South African and international context. The definition of quality and QA are discussed and a brief outline of the South African HE system, including legislation, and the QA challenges it faces post-1994 are given. This is done in the context of QA locally as well as internationally. Access to HE and the agricultural sector is also discussed.

Chapter 3: Monitoring and evaluation: Impact evaluation

Chapter 3 focusses on the concept of impact evaluation (IE). The meaning and definition of M&E as well as IE are discussed in the context of other M&E functions. Operational evaluation (OE), outcomes-based evaluation as well as training impact are discussed. The theory of an M&E tool, the Balanced Scorecard (BSC) is briefly discussed within the context of this study. Legislation on performance M&E, which is deemed important specifically in South Africa, is also briefly discussed.

Chapter 4: Research design and methodology: data collection, analysis and findings

This chapter gives an outline of the research methods applied and presents the collected data in the form of graphs and tables. The design mainly utilised structured questionnaires in both the quantitative and qualitative data collection methods, with the quantitative part administered as structured interviews. The data collected was interpreted with assistance and guidance from a qualified statistician from Stellenbosch University and the findings subsequently presented.

Chapter 5: Conclusion and recommendations

The final chapter is a summary of the study and concludes with the findings and recommendations. The recommendations are then summarised and presented in the form of an M&E tool outline, known as a BSC. A conclusion is the end of the chapter.

CHAPTER 2:
THEORETICAL FRAMEWORK FOR AGRICULTURE IN HIGHER EDUCATION

2.1 INTRODUCTION

The purpose of this chapter is to give a brief outline of Quality Assurance within HE, with the focus on the South African HE system and specifically agricultural education and training.

The South African agricultural education system is unique in the sense that its main focus was originally towards commercial farmers as well as farm workers in certain instances, but changed post-apartheid to also serving the subsistence and emerging farmers. Many programmes offered at the Agricultural Training Institutes are HE-based, which implies that it should conform to HE legislation, but at the same time serve the agricultural community. The latter is seasonally driven and has a serious challenge regarding access to HE due to lack of funds as well as the inequalities that exist post-1994.

Furthermore, the colleges are expected to deliver quality education, and are by law required to adhere to quality prescripts by the South African Qualifications Authority (SAQA). The agricultural colleges, called Agricultural Training Institutes (ATIs), however would need to be organised as part of the bigger plan to ensure that the educational mandate of the Department of HE is realised (RSA, 2009:5).

The importance and rationale behind introducing a set of norms and standards would therefore be to give ATIs a national platform where these institutions function on the same level in terms of accountability and access to resources. Norms and standards would give each college an opportunity to participate more broadly and with greater impact on the transformation agenda for agriculture (RSA, 2009:6).

This chapter was therefore structured to address the study objective number two, which indicate that quality of training programmes and QA is an important part of ensuring that programme outcomes are realised.

In order to put QA in context of HE and AET, the definition of quality and QA are discussed. Thereafter, QA of HE in South Africa as well as HE legislation in general as well as specifically pertaining to QA in HE in agriculture are expanded on. The idea is to make sense of the complexities of higher education within the agricultural sector.

It is subsequently important to discuss quality assurance challenges within HE in South Africa. Access to HE as well as institutional culture and change management are perceived as important for a good QA system, therefore it will also be discussed.

The chapter also gives a brief overview of how HE quality assurance systems are organised in various countries, specifically Germany, the United States of America, Norway, the United Kingdom and Chile. This is important as the South African HE system should be benchmarked against HE quality assurance systems applied in different countries.

2.2 QUALITY ASSURANCE IN HIGHER EDUCATION: SOUTH AFRICAN AND INTERNATIONAL CONTEXT

2.2.1 Definition and context of Quality and QA in HE

The bases of any QA system, is the context in which quality is defined. Quality and QA in education would therefore have a different meaning to the same concepts within the realm of engineering or even project management. There the concepts of quality may favour a more applicable definition, though it would be understood as the same concept. It is therefore important to define QA within the context of HE.

Defining QA in any context is quite challenging, and specifically so in the context of HE. Although the basic definition of quality means “excellence or outstanding performance” according to Woodhouse (1999: 29), the meaning in the context of HE is often misinterpreted and/or misunderstood (Tsinidou, Gerogiannis & Fitsilis,

2010:227). Woodhouse (1999:29) also indicated that the most common and accepted definition of quality is "fitness for purpose". The South African Higher Education Quality Committee (HEQC) also has its set principles or approach to quality assurance on the "fitness for purpose" concept, but added to this is fitness of purpose, transformation and value for money (CHE, 2007:3). It is clear to the researcher that the inclusion of the additional concepts aims to enhance the shortfalls that other authors identified. The challenges to this effect will be discussed later in this chapter.

Woodhouse (1999:29) further expanded on the "fitness for purpose" concept as allowing institutions to define their achievement of quality with their purpose embedded in their vision and mission. This explanation allows institutions to be independent and unique to a certain extent. The challenge with this concept is the essence of QA, the determination of success by means of evaluation. In the South African case, the government agenda is not always regarded as important by HE institutions, as they have their own objectives and visions. This complicates the effort to define QA, specifically with the rich history of the South African education system and the vast ideologies on this definition.

Often, the definition of quality is used by countries to define QA, and within this context their QA systems are developed. This in itself is a process that is evolutionary rather than revolutionary. Hence, the Organisation for Economic Co-operation and Development (OECD) (2013:38) quoted Woodhouse to define Quality Assurance as follows:

> The phrase quality assurance refers to the policies, attitudes, actions and procedures necessary to ensure that quality is being maintained and enhanced. Quality assurance is sometimes used in a more restricted sense, either to denote the achievement of a minimum standard or to refer to assuring stakeholders that quality is being achieved (i.e. accountability).

In the South African context the QA of HE is determined by the Council on Higher Education (CHE) document on quality audits (CHE, 2007:3). This document defines how quality and its management should be performed by institutions. QA in South Africa is therefore multidimensional as per the OECD (2013:38). The most important

elements of QA, as defined by the South African QA system, which indicates its multidimensional composition, are (CHE, 2007:3):

- **Quality assurance** – the policies, systems, strategies and resources used by the institution to satisfy itself that its quality requirements are being met;
- **Quality support** – the policies, systems, strategies, and resources used by the institution to support and sustain existing levels of quality;
- **Quality development and enhancement** – the policies, systems, strategies and resources used by the institution to develop and enhance quality;
- **Quality monitoring** – the policies, systems, strategies and resources used by the institution to review, monitor and act on quality issues.

Mukherjee (1995:578) furthermore stated that defining quality assurance in Higher Education is difficult, because the difficulty lies in defining the core values of an education system, which is "customer orientation, management commitment and continuous improvement". As indicated by the South African QA system, the very core values that the previous author has stated are included in the elements that govern QA in South Africa.

It is however important to measure the compliance or the success of a QA system. This measurement is where the most challenges are according to the literature that was consulted. The previous statement is reaffirmed by Tsinidou *et al.* (2010:227) and Mukherjee (1995: 573). These authors also raised the concern and challenges of QA systems, because the outcomes of educational interventions are often intangible and difficult to measure. Tsinidou *et al.* (2010:227) defined the outcomes of educational services as "transformation of individuals in their knowledge, their characteristics, and their behaviour", attributes that are not easy to measure.

Materu (2007:1) expanded on the above concepts of quality and QA and stated that the definition of quality and QA, specifically in the context of tertiary education, is hard to define, as also stated by Mukherjee (1995:571), mainly because of institutions' broad autonomy. He further indicated that the measurement of quality implies doing so against a common standard. Materu (2007:1) is therefore of the opinion that the needed common standard for measurement within HE is non-existent.

Consequently, the definition and context of quality and QA has been formulated by Materu (2007:1) in line with Tsinidou *et al.* (2010:227) and Mukherjee (1995:572). Depending on the definition selected, quality implies a relative measure of inputs, processes, outputs or learning outcomes. Institutions, funders, and the public need some method of obtaining assurance that the institution is keeping its promise to its stakeholders. This is therefore the primary goal of quality assurance.

The South African system, that is discussed next, is therefore based on international best practice, and the system is in place to ensure a successful education system. However it is not without its challenges, as the South African educational system is divided into different areas, of which agriculture is one. The real need is to bring different spheres of the South African education system together to ensure that the definition of quality and QA is universally accepted.

2.2.2 QA in HE: A South African case study

Literature indicates that quality assurance is an important part of effective management of any educational institution. Added to the above described definitions of QA the UNICEF (2000:3) report defines quality, amongst others, as "outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society". With this definition UNICEF described education as a complex system which has importance in politics, culture and the economy. QA in South Africa is therefore important, specifically within the realm of AET, as a means to redress the wrongs of the past and more importantly, poverty alleviation, as part of the South African government vision, as included in the NDP.

Furthermore, the NDP acknowledged that there are challenges within South African education and proposed various actions and policies to address these inequalities, not only in the HE system, but from the foundation phase of education. The NDP (RSA, 2011c: 261) therefore stated that:

"Education, training and innovation are central to South Africa's long-term development. They are core elements in eliminating poverty and reducing inequality, and the foundations of an equal society. Education empowers people to define their identity, take control of their lives, raise healthy families, take part confidently in

developing a just society, and play an effective role in the politics and governance of their communities".

Also, within South Africa the challenges of quality in HE post-apartheid were even greater as there was no system that coordinated quality assurance within HE (Kistan, 1999:125). Quality assurance in HE is therefore a contentious subject and made even more complicated by the different viewpoints from different spheres within the HE realm. The researcher therefore concurs with Smith and Ngoma-Maema, (2003:345) who indicated that QA is particularly important in developing countries especially with its unique challenges. In SA the disparities are mainly due to the education system that was of a different quality for different racial groupings during the apartheid era.

The South African Government subsequently realised the challenges that existed post-apartheid in achieving quality education for all. The Government therefore indicated in The White paper for post-school education and training (PET) that challenges specifically existed with regards to quality in the post-school system. The PET stated that there are sections within the post-school system that lack satisfactory quality of education and that expansion of these entities are only possible if quality can be improved (RSA, 2013:8).

Kistan (1999:125) also indicated that government-funded higher education is highly politically motivated. The reason for the government interest and influence is the need and focus on accountability. Accountability in the government context means the following: "where is public spending going? Is this spending making a difference? Is it providing value for money? (RSA, 2011b:3)". This is fully applicable to the EATI, which is a programme within the Western Cape Department of Agriculture (DoA), and therefore a government entity.

Additionally, agriculture and agricultural training are essential to ensuring food security for the country, therefore it is imperative that the agricultural training sector is organised and governed accordingly (DAFF, 2010:17). The current situation, where the agricultural institutions are bound by HE as well as agricultural legislation, makes QA and M&E difficult and almost impossible, as institutional management is divided on where their priorities should be concentrated. As they are accountable to the DoA as

well as the Department of HE for their performance, the default is usually to comply by achieving the minimum requirements. The question is how should performance within an ATI be managed and evidence provided towards quality education when no standardised QA and M&E system is in place?

Furthermore, access to HE, specifically within agricultural education and training, has various challenges which should be addressed by means of a QA system. Many of these would not be addressed in the short term, but a long-term strategy is essential. The NDP is a plan that should give a solution to the common HE challenges, but it is clear that AET barriers and challenges are unique to the sector and a different approach should be formulated. The challenge of access to HE will be discussed in a subsequent section on challenges within HE quality assurance.

This section discussed the legislative concerns regarding HE and the agricultural education and training concerns. The subsequent sections will give a brief insight into the general as well as the specific agricultural legislative documents.

2.2.2.1 General HE legislation

The South African Government realised that many countries shifted towards a more accreditation-minded and accountability approach to HE. It subsequently launched The Higher Education Quality Committee (HEQC) in May 2001 in order to address the challenges that higher education encountered (CHE, 2004a:1). The overall goal of this action was to ensure that a QA system that would be established would be relevant and responsive to the needs of learners and all other stakeholders. It is therefore fitting to have a brief review of the legislation that HE institutions are compelled to adhere to.

The HEQC sets its principles or approach to quality assurance on the following: fitness of purpose, fitness for purpose, transformation and value for money (CHE, 2007:3). The CHE document on quality audits further explains that institutional planning and action are the backbone of QA that includes elements of quality control, support, development and enhancement. This is the fundamentals for quality monitoring.

The abovementioned agencies and the specific elements they uphold form the current guideline for educational institutions and are binding by means of legislation. The CHE is the delegated authority to ensure the quality assurance mandate as given to the South African Qualifications Authority (SAQA) under the SAQA Act of 1995 (CHE, 2004a:4). The Higher Education Act 101 of 1997 indicated that the CHE should establish the HEQC as a permanent sub-committee within the organisation with its functions of programme accreditation, institutional auditing and quality promotion (CHE, 2004a:3). The question that instigated the establishment of the HEQC was ultimately the responsibility of quality assurance. The question on "who is responsible?" and who would ensure that learners get education that is relevant and at an acceptable standard, were part of the HEQC mandate.

In short, the main aim of SAQA was to develop the National Qualifications Framework (NQF), and Section 14 of the SAQA Act of 1998 made provision for regulations governing the Education and Training Quality Assurance bodies (ETQAs) as part of the NQF's quality management system (CHE, 2004a:4) The minister of Higher Education and Training, Dr B. Nzimande, described the NQF as a means to equip learners with qualifications that is both relevant and of high quality (RSA, 2011d: 3).

The principles, as stated above, are incorporated in the HEQC mandate as previously mentioned. ATIs, as institutions of HE, are governed by these regulatory bodies and the legislation it is mandated to enforce. Furthermore, it is interesting to note that the success and applicability of the HEQC in the South African context were confirmed when it became the first African agency of its kind to be recognised for its "comprehensive adherence to the good practice guidelines" by the International Network for Quality Assurance Agencies in Higher Education (INQAAHE)" on 7 November 2011 (CHE, 2011:1).

Additionally, Botha (2009:203) stated that the enhancement of students' learning experience is the most important aspect of QA. The many mechanisms and procedures in place do not necessarily ensure that the stated outcomes, such as student learning experience, are directly reached and these may be interpreted differently by external and internal evaluating agencies. Therefore, within the South African context, self-

evaluation as well as peer-review by an external agency is implemented to address these possible discrepancies (CHE, 2004b:4).

Consequently, quality and excellence have become non-negotiable as per the HEQC, to ensure access, success and social and economic responsiveness in higher education (CHE, 2004b:4). These fundamentals are the pillars on which the HEQC base its principles for quality of a higher education institution.

On the other hand, although ATIs are accountable within the sphere of HE legislation, sector specific guidelines or legislation does not officially exist. Within this grey area in which ATIs function, the M&E responsibilities of these institutions are not important or not regarded as priorities. The main focus of the ATIs at this stage is to ensure that the proposed legislation is passed in Parliament. The burning question at this stage is also whether this legislation will be passed under the guidance of the National Department of Agriculture or the Department of Higher Education.

The researcher's concern within AET is that the needs of the stakeholders are not taken into consideration, seeing that there is no coherence within the sector. This statement is the opinion of the author taking cognisance of the lack of legislation that specifically organise the AET sector, which will be discussed next.

2.2.2.2 Legislation pertaining to HE in Agricultural training

Since different institutions present courses on either FET (further education and training) or HET level or both, the applicable educational legislation is adopted to minimum compliance. FET has more specific legislative guidelines, such as the Skills Development Act, Act 97 of 1998 (RSA, 1998:6) as it is responsible for skills development. HET on the other hand, apart from the general HE legislation, is not specifically guided within the agricultural sector.

The guiding document within the agricultural HE sector, albeit not approved as legislation as yet, is the Agricultural Education and Training strategy (AET strategy) that was published in 2005 (RSA, 2005). The AET strategy describes the inadequate quality control within the formal education and training sector and therefore the

ineffectiveness of providing a quality education product (RSA, 2005:8). The formal agricultural training sector within government subsequently drafted the Norms and Standards for Agricultural colleges in 2005 to address the issues within the AET strategy (RSA, 2005). This document was approved by the Intergovernmental Technical Committee on Agriculture (ITCAFF) that specifically addressed the topic of quality assurance, but to date no Act or Bill exists to mandate this formally (RSA, 2011a:10).

As a result, the government realised the importance of a College Revitalisation Plan (CRP) and consequently implemented the CRP since 2005 to improve the quality of agricultural education by various means (EATI, 2013:10). The CRP consisted of five pillars including (EATI, 2013:10):

1. Improvement of infrastructure and equipment;
2. Curriculum review with emphasis on value addition;
3. Accreditation and registration of colleges;
4. Leadership development and change management;
5. Strengthening of information and communication technology including governance.

The CRP was greatly supported by the project, Transforming Agricultural Colleges into Agricultural Training Institutes (TACATI), focussing mainly on the second and fifth pillar of the CRP, which started in 2011 and was completed in 2015. The second pillar specifically focussed on accreditation of curricula and quality assurance. The TACATI project was funded by the Netherlands Initiative for Capacity Development in Higher Education (NICHE) in collaboration with the Wageningen University (ICRA, 2014: 1).

Due to these initiatives, it is clear that a concerted effort has been made to ensure quality education. However, the TACATI project has come to a conclusion, but no progress has been made towards a transformed, united AET sector. This has been confirmed, as there are no legislation that specifically guide how ATIs evaluate themselves. Thus, not ensuring or promoting quality assurance with the same standard at all the ATIs implies the prevention of the creation of a benchmark for the evaluation of quality.

Taking cognisance of the above, it is necessary to expand on the QA challenges that South African HE faces.

2.2.3 Higher Education QA Challenges in South Africa

Quite a few authors recently criticised the current HE quality assurance system, to the extent that it is described as inappropriate for South Africa. Their opinions will consequently be discussed.

The researcher indicated in 2.2.2.1 that stakeholders are not consulted with the QA process. This is substantiated by Pretorius (2003:130) who indicated that stakeholders in HE include students, academics, the labour market, society and government and all have different views on quality. He further stated that quality in HE meant different things to the various stakeholders as they have different needs and expectations. This basically implies that all of these stakeholders need to be consulted with the development of a QA system, which clearly was or is not the case.

Pretorius is further of the opinion that the concepts of "fitness for purpose" and "value for money" are one-dimensional, as it does not currently cater for the needs of all stakeholders (Pretorius, 2003:130). He further (Pretorius, 2003:134) indicated that a paradigm shift is necessary in the South African HE system, where the focus is on continuous improvement rather than the concept of fitness for purpose as foundation. Therefore, Pretorius (2003:134) is of the opinion that the HEQC's approach to QA in HE in South Africa is not appropriate for South Africa indicating that the current prescriptive approach is not conducive to a culture of continuous improvement. Continuous improvement, according to Pretorius (2003:134) would entail the following:

- Customer focussed (internal and external)
- Obsession with quality
- Scientific approach to decision-making and problem-solving
- Long-term commitment to change

- Teamwork
- Employee involvement and empowerment
- Bottom-up education and training
- Freedom through control
- Unity of purpose

Literature from the South African perspective however persuaded the researcher that the South African QA system does indeed address the multi-dimensional aspects, as this is clearly stated in the CHE (2007:3) document. The applications of the QA management principles are lacking, not necessarily the legislation and intent, as indicated by Pretorius himself. Again, it is the measurement and approach of QA in South Africa that create disparities.

Therefore, with literature cited, the researcher is of the opinion that legislation and the introduction of baseline management systems are important within the complexities of the South African QA system. As with AET, QA is not uniformly managed, due to a lack of direction by legislation. Measuring the aspects, as described by Pretorius, is difficult as it pertains to often intangible parameters.

However Symes (2006:762,763) formulated an opinion that built on the "paradigm shift" as described by Pretorius (2003). He interpreted themes that were represented at a symposium on HE with the topic of: "Higher Education Quality Assurance in South Africa widens Democracy or not?" He referred to the preconditions for democracy as described by Harley. These are: "inclusion, participation and enhancement (or enlightened understanding)". This is seemingly not different from the vision and aims of the South African QA system, as the HEQC approach to quality entails the following:

- Allow providers to engage with and operationalise such understandings within their own institutional contexts and missions.
- Provide stakeholders with a framework within which to make judgements about quality of higher education and training.
- Enable the HEQC itself to develop the appropriate policy and procedures for the ETQA responsibilities of the CHE (CHE, 2004a:9).

Moreover, Symes (2006:764) was of the same opinion as described by Pretorius (2003:134) regarding the direction of QA in the South African context. Symes (2006:764) was of the opinion that QA is part of a broader collaboration between Government and all stakeholders. Additionally, he concluded that the goal of the HEQC should be monitoring rather than prescriptive.

Symes (2006:764) concurred with other authors, albeit from another perspective. The author further argues that in order to widen democracy, "quality assurance must be an inductive (bottom-up), rather than deductive (top-down) approach". Symes (2006:764) concluded that both Park and Mammen advocate that Government and the HEQC should engage with all stakeholders towards a common goal of developing citizens by means of knowledge and skills development that can contribute to economic development.

Consequently, the arguments afforded by Mammen and Park as described by Symes (2006:764) are similar to what Pretorius (2003:134) advocated regarding the direction that the South African higher education should follow. Symes (2006:64,765) related this to the question on "value for money" regarding the tension of efficiency and transformation in South African policy documents, post-1994. The author summarised that value-for-money, according to government, mainly referred to outputs (throughput rates, graduation rates, equity outputs) while value for money in the context of higher education is a multi-faceted principle (Symes, 2006:765).

In short, stakeholder participation and accountability regarding public funds are reckoned as important towards quality education. Literature indicates that these parameters are included in legislative documents, but the "paradigm shift" as indicated by various authors, should be in the formulation of institutional missions and visions and the approach to application within the current QA system.

Symes (2006:767) consequently highlighted a key question on stakeholders such as their power of influence and the weight that their participation should bear. He referred to Saar Berkhout who cautioned that the idea of multi-dimensional co-operation is ambitious, mainly because of the changing nature of higher education and the

challenges of managing it, specifically where and by whom new knowledge is generated. The student population is also an ever changing stakeholder, which Berkhout describes as a "transient population".

The challenge is however: "Who decides what constitutes quality? Who participates in its production? What do we understand by an educated citizen? How do these questions relate to our understanding of freedom, autonomy and accountability in higher education?" Symes (2006: 770).

Conversely, Gouws and Waghid (2006:754) in discussing how to "widen democracy" by means of QA within HE, cautioned against being too critical of the process, should it be inclusive of all stakeholders. They raised a concern that is evident in the arguments of Symes (2006:770) on the credibility of the HEQC in coordinating the QA process within HE. The challenge is therefore to uphold the integrity of the QA system, as mandated to the HEQC. (Gouws and Waghid, 2006:754).

Furthermore, within the South African context, the challenge remains to get the agricultural HE system in line with the efforts of the HE sector. Self-evaluation and peer-review by an external agency have been implemented to validate the QA of HE institutions and this need to be adopted by all institutions to ensure that quality becomes as critical as ensuring access and success in HE (CHE, 2004b:4). Consequently, the AET sector has realised that access to agricultural HE institutions remains a challenge in the agricultural sector and is prioritising the mitigating efforts.

The following section will give more insight into the mentioned challenges of access to HE within the South African context.

2.2.3.1 Access to HE and the agricultural sector

A challenge that is known, but not adequately addressed, is the issue of access to HE by students, especially from the poor and rural communities in South Africa (Naidoo, 2005:85). This is a reality not only true in the pure sense of HE, but also the Agricultural HE sector, even ten years after Naidoo has made this statement. It must also be kept in mind that the main goal of the South African Quality Assurance system is two-fold.

One, to redress and ensure equality, post-1994, and two, the assurance of quality in the South African Higher Education system (Soudien, 2007:1).

Akoojee and Nkomo (2007:385) indicated that there is a true national need to enable women and PDI students to access HE institutions. The authors furthermore stated that there should be some form of assurance that the mentioned student groupings would be successful. The previous statements was made subsequent to research findings by Akoojee and Nkomo (2007:386) where it was concluded that black students fared poorly at previously white institutions, compared to their white counterparts. It was furthermore concluded that low levels of throughput and high attrition rates, especially among first-year university students, was not a uniquely post-1994 phenomenon (Akoojee and Nkomo, 2007:386).

Therefore, the discourse that existed for students of the disadvantaged racial groups towards access to the HE sector was a concern post-1994 and therefore necessitated the Education White Paper of 1997, which was the basis for the envisaged transformation (Akoojee and Nkomo, 2007:389).

Akoojee and Nkomo (2007:389) subsequently referred to a similar concept to the change that Moore (2005:95) discussed regarding change management, which will be discussed in the next section. The QA framework as per the CHE would therefore be appropriate to ensure access initiatives as well as change management towards transformation be institutionalised (Akojee and Nkomo (2007:385).

The problem of access to HE is however not only a South African phenomenon, but a global concern. Torres (2012: viii) indicated that the competition that existed amongst HE institutions tends to reform to that of a vocational orientation as per the point of view that HE institutions should serve the economic well-being of society.

Also, the promise of governments across the globe has been one of free education, even in South Africa post-1994. The reality is that, even in countries where this system has been in place to a certain extent, this promise is also waning. This is also the reality in South Africa, although there is increasing pressure on the governing political party, the African National Congress (ANC), to make good on this promise (ANC, 2013:74).

It is therefore clear that the challenges people face to gain access to HE do not deter them from trying to gain this access, even under circumstances where politics and funding are barriers. The growing privatisation of HE, lack of funding and discourse in the SA educational system, still do not discourage young people to pursue the opportunity to rise above circumstances of poverty.

Hence, the NDP (RSA, 2011c:261) states that education and training are the core elements in poverty elimination and reducing inequality, as with the policies on HE. Access to HE is however a concern, as one of the visions of the NDP (RSA, 2011c: 268) is that, universities should be an environment where PDI as well as female students should feel welcome and be supported.

The concern in South Africa is therefore two-fold: firstly, of access due to inequalities in the education systems as an effect of the apartheid system, and secondly, lack of access due to lack of funding, especially previously disadvantaged students (RSA, 2011a: 270).

Although the concern of the South African HE system is about issues that are comparable internationally, the biggest concern is not one shared with the rest of the world. The biggest challenge is the qualification or lack thereof, of academic staff. The NDP states that academic staff is "insufficiently qualified" as "only 34% of academic staff hold PhDs" (RSA, 2011c:271). The NDA therefore proposes that this figure of 34% PhDs be improved to 75% by 2030 (RSA, 2011c:278).

With the concerns noted, and with the researcher's experience within HE, it is appropriate to concur with Walker and McLean (2010:866) on university education and professional abilities within South Africa where professionalism and knowledge of academics are seen as the key towards poverty alleviation.

The PET (RSA, 2013: 32) also indicated that access to HE is a concern, and listed various reasons for this. This White Paper was constructed as part of the NDP's proposed actions for new legislation/Acts to address certain inequalities as mentioned. The reasons for concern regarding access to HE were stated in the PET as follows:

- There continues to be significant inequality in the schooling system, especially in terms of access to high-quality schooling for the poor and for those living in townships and rural areas.
- Linked to this, school leavers are generally not well-prepared for university study. Student-to-staff ratios are too high at undergraduate level, particularly for first-year students.
- Early-warning systems and other methods of recognising students who need support are not adequate.
- Factors that impact on student success are diverse and include inadequate funding, poor living conditions, and insufficient support for both academic and social adjustment to university life.
- Support for professional development and recognition of academic staff in the area of undergraduate teaching is generally weak.

Furthermore, the Department of Agriculture and Fisheries' (DAFF) also admitted that there were access barriers to HE and specifically access to AET. It subsequently commissioned a study on AET access and barriers to AET (DAFF, 2010: 4). The study was conducted to analyse access barriers and provide details on these issues, specifically in the agricultural sector. The subsequent compiled document also included strategies to address the identified problems in general, but also the HE side of AET. These include offerings of learnerships, internships as well as bursaries to the youth to attract them to the agricultural sector. Barriers that were identified were grouped into the following categories: socio-cultural, economic, institutional, technological and environmental or infrastructure barriers. With the grouping it can be deducted that access to AET is even more complicated than with HE on its own.

Various recommendations were proposed to address the identified barriers, but due to the significant disparities, a long-term approach to these was suggested, as the issues are very complicated (DAFF, 2010: 68). A factor that needs to be pointed out is the lack of career guidance to the youth on the job opportunities within the agricultural sector. The AET document on barriers to AET assigns this mainly to the limited information that educators and other role-players in career guidance have to disseminate to the youth.

The following section will expand on institutional culture and change as indicated by Akoojee and Nkomo (2007:389) and Moore (2005:95), in the context of the QA challenges already discussed.

2.2.3.2 Institutional culture and change management

Ultimately, one of the biggest challenges in any HE institution is the institutional culture and the capacity for change (Smout, 2005:8). Even with fully functional quality assurance programmes, institutions may face challenges, as not all staff see the importance of such a system and may even see it as a negative and unnecessary time-wasting intrusion on their teaching and research duties (Smout, 2005:8).

More specifically, getting academic staff to "buy-in" on the QA system is the real challenge and it is senior management that needs to drive the change. Moore (2005:95) indicated that a quality assurance system is not only for evaluating efficient systems, but also to enable prompt and institutional change and support, as was the case in South Africa post-1994. Key transformational targets, as per the changing state of affairs and legislation, should be one of the strengths of an effective quality assurance system. The author (Moore, 2005:95) further indicated that there seems to be an assumption that a quality assurance system is the primary responsibility of the institution and its management. They are therefore responsible to identify drivers for necessary change, whether stemming from the institutional goals or from national objectives such as amendments to legislation.

The researcher, as per AET experience, concurs with Moore (2005:96) that change within institutions would only be possible if it is part of the organisational framework. The reason behind this statement is that policies are complied with to the minimum, and institutions would rather risk forgoing incentives and absorb sanctions, rather than changing the institutional direction as prescribed by policy.

Subsequently, the lack of institutional direction and change is blamed on the lack of skilled academic management on the middle tiers of management, which may not be systematically equipped to lead adaptation, but rather geared to uphold the current organisational equilibrium (Moore, 2005:98, 101).

With the discussion on QA challenges in South Africa, which included access, institutional culture and change, the researcher is of the opinion that QA principals of different countries across the World should be briefly discussed or at least summarised. This is therefore done in the next section, mainly to put the South African QA system in context of what was or is the norm Worldwide.

2.2.4 QA in HE: International comparison

It could be perceived that because of the vast differences in different cultures across the World, that education and academic systems, specifically with regards to QA, would also be different. With literature cited, there are definite differences between QA systems in other countries, but a common denominator that could be concluded was that all countries are reverting to QA within their HE systems by means of a more accountable and accreditation- minded approach to higher education.

The countries that were considered are Germany, United States of America (USA), Norway, the United Kingdom (UK) and Chile. The reasons for the selection are that it covers most of the Western oriented countries. Also, these countries would be perceived to have similar cultural challenges as South Africa. Another reason is the different ranking of these country's HE systems, as ranked by Williams, de Rassenfosse, Jensen and Marginson (2013: 604). The countries were therefore also selected to cover the total spectrum of the ranking system. The ranking of the selected countries as per Williams *et al*. (2013: 604) are indicated in table 2.1.

Table 2.1: Ranking of countries: quality of national HE systems

Country	**Ranking**
USA	1
Norway	7
United Kingdom	10
Germany	17
Chile	37
South Africa	46

(Source: Williams *et al*., 2013)

Although the criteria for quality as per Williams *et al*. (2013) were different to this study, it can be used as a starting point to compare the South African system to countries in the rest of the World. By no means is this selection exhaustive, as this is not the focus of this study. Therefore, the systems as indicated by the authors consulted, is summarised in table 2.2.

Table 2.2: Summary of QA systems in different countries

Country	**QA System**	**Author/s**
South Africa	Multi-faceted: (Fitness for purpose; value for money) - Self-evaluation - Peer review - Accreditation (Independent agency)	CHE (2004b) Gouws &Waghid (2006) Pretorius (2003) Symes (2006)
Germany	Multi-stage process: - Internal evaluation - External evaluation - Follow-up	Bornmann, Mittag and Daniel (2006)

USA	Institutional accreditation: - Resource dependent - Quality assessment based on: 1. Academic facilities 2. Library holdings 3. Qualifications and activities of academic staff	Ewell (2010)
Norway	Quality development employing "mixed models" - Cross-institutional evaluations - QA institutions - Leadership responsibility - Elaborate internal systems (self-evaluation) - Short-term actions	Lycke (2004)
UK	Audit-based: - QA systems for management control - QA systems for learning and innovation - TQM approach: students as consumers - Accountability	Hoecht (2006)
Chile	Licensing system: - Institutional application for license (autonomy) - Accreditation follows, but voluntary - Accreditation only compulsory for medicine and pedagogy	OECD (2013)

(Sources: Adapted from CHE (2004b); Gouws &Waghid (2006); Pretorius (2003); Symes (2006); Bornmann *et al.* (2006); Ewell (2010); Lycke (2004); Hoecht (2006); OECD (2003))

2.3 DISCUSSION

Objective 2 of this study aims to assess the perception of quality from the graduates for the indicated year groups. It was therefore important to discuss the concept of quality and QA within the context of the study. Tsinidou *et al*. (1999:29) indicated that confusion or misinterpretation of the definition are often experienced, therefore it is necessary to define the concepts within the specific context. This statement made the study regarding QA in HE challenging.

The first challenge mentioned in this chapter was defining quality assurance. Internationally it seems that the most common and accepted definition is one of "fitness for purpose" (Woodhouse, 1999:29). Many different definitions were placed in context of Education and HE specifically, although not concluded, as Materu (2007:1) and Mukherjee (1995) alluded to the problem as a cause of the autonomy of HE institutions. Materu (2007:1) specifically indicated that, referring to quality, it should mean that there is some standard to measure against, but this is not the case, as each institution formulates its mission and vision that direct their promise to their stakeholders.

Subsequently it was important to review the South African HE system as well as to give a summary of selected countries' QA systems. Table 2.1 represents the quality ranking of the selected countries' national HE systems. This could be an indication, that even with an organised system, other aspects could be factors that contribute to the meaning of quality within HE. The factors that were indicated are not within the scope of this study, but the ranking was used as selection tool.

A common denominator that could be concluded was that all countries are reverting to QA within their HE systems by means of a more accountable and accreditation- minded approach to higher education, such as the case in South Africa. With certain countries the QA system has been in place or in process since the 1980s, but it is clear that it is an evolving process that changes with international trends with impact on "fitness for purpose" as per the definition. With the South African HE system, challenges stem from the apartheid era where education was unequal and not regulated. These challenges have an impact on the success of education as a means of ensuring equality and poverty alleviation. The SA HE system can be positively compared to other successful systems internationally, and be concluded that it is structured by means of international best practice.

It is important to take cognisance of authors' suggestions that within the South African QA system, continuous improvement should be the main aim of QA. Stakeholder involvement, as in the USA and Norway, should be considered as a process to ensure an inclusive, bottom-up approach to QA. Another important aspect is the integrity of the agencies auditing the processes.

Furthermore, with agricultural education in the best position to address poverty alleviation, it is important that QA within the sector is properly organised. The challenge, however, exists that there is no specific approved legislation guiding ATIs at this stage. With the lack of proper QA within the agricultural education and training sector, it is almost impossible to strive towards the "paradigm shift" within HE as indicated by Pretorius (2003:134) when a baseline system is not yet in place. It is therefore important that legislation is approved as per the proposed documents within agricultural education and training. This would have implications in addressing the challenges faced when accessing the agricultural sector.

Consequently, the QA system needs to be structured in such a way that graduates from agricultural institutions are employable. Azcona *et al.* (2008:40) stated that graduates are not effectively prepared with the necessary skills as per the needs of employers. It is therefore imperative that stakeholders are consulted within the process, but more importantly, that the QA framework addresses the shortcomings of institutions and ensure that access initiatives are in line with the NDP.

2.4 CHAPTER SUMMARY

This chapter has given a brief outline of the South African HE system and specifically the challenges it faces post-1994. It started with the definition of QA and also indicated legislation pertaining to HE in general as well as AET in South Africa specifically. The agricultural education system has a big role to play regarding skills development and poverty alleviation within South Africa, but the QA system of the ATIs is not in place. This has huge implications towards accreditation of institutions and the perception of quality by its stakeholders

Also, some of the challenges that are encountered within the HE and AET sector was highlighted, specifically access to HE. It was further indicated that institutional culture and change would be a step in the right direction in order for proper QA system implementation to realise.

Furthermore, it was indicated that HE systems internationally are not much different to that of South Africa, but the researcher believes it can be concluded that there is no fit-for-all system.

Consequently, it is important to discuss the need for impact assessment within a QA system and specifically regarding monitoring and evaluation (M&E) of HE offerings and the possible impact on stakeholders.

CHAPTER 3:
MONITORING AND EVALUATION: IMPACT EVALUATION

3.1 INTRODUCTION

This chapter will give a brief overview of the meaning and definition of M&E as well as Impact Evaluation (IE). The aspect of M&E focussed on, is the importance and

impact that interventions have on public programmes, hence the importance and application of impact evaluation.

Furthermore, there are a vast difference in the operational or process evaluation (OE) of an intervention and the intended outcomes thereof (IE). The possible confusion will therefore be addressed within the process differences of formative and summative evaluation.

Outcomes-based evaluation as a means of governments to focus on results is discussed next. Planning is indicated as an important part of the process in order to evaluate the intended results of an intervention.

Training impact evaluation (TIE) is subsequently discussed within the context of this study of the EATI as training institute, as a measurement of results. The balanced scorecard (BSC) are therefore proposed and discussed as measurement tool of M&E within the context of measuring outcomes of an intervention.

Additionally, legislation pertaining to performance M&E are discussed in order to expand on the significance and importance of legislation within government, as guidelines towards government's commitment for effective governance and changing lives of its people.

A brief discussion- and chapter summary will subsequently be presented at the end of the chapter.

3.2 M&E AND IMPACT EVALUATION: MEANING AND DEFINITION

It is important to understand the concepts and definitions of M&E as well as IE in order to put it into context of the issues pertaining to this study. The following section will attempt to use definitions and opinions of various authors to form a framework for the research study of the EATI.

The South African National Evaluation Policy Framework defines evaluation as the collection and analysis of evidence pertaining to government interventions (RSA,

2011b:3). These interventions include public policies, programmes, projects and organisations. The evidence that need to be assessed is issues such as relevance, effectiveness, efficiency, value for money, impact as well as sustainability. The policy furthermore describes monitoring as the on-going tracking of the planned intervention progress and initiation of corrective action if needed (RSA, 2011b:4). It is within this definition that M&E as well as impact evaluation (IE) will be discussed further.

According to Oswald and Taylor (2010: 114) M&E is an integrated process with various aspects of importance. It entails experience, information and knowledge collection through various methods which aim to assess progress in order to make better decisions towards particular goals and objectives.

With all these different aspects of M&E it is easy to understand why the implementation and application of such a system is so important to ensure that government deliver on its promises of service delivery. The other aspect that is important in such a system is the assurance that the intervention was successful, thus, had a positive impact on the citizens to whom it was directed. It is therefore important to have a good understanding of how the M&E system can measure the intervention's milestones on delivery and implementation, as well as the success of such a project. The planning process, specifically geared towards the impact on people's lives, is an important aspect of an M&E system.

The Logic model, described by the W.K. Kellogg Foundation (2004) would be such a planning process as indicated above. According to W.K. Kellogg (2004:2) M&E contains 5 levels as can be seen in Figure 3.1. The key elements, namely, inputs, activities, outputs, outcomes and impacts can be divided into two areas. The first area entails your planned work and the second the intended results. As indicated, IE is the last element of the results area.

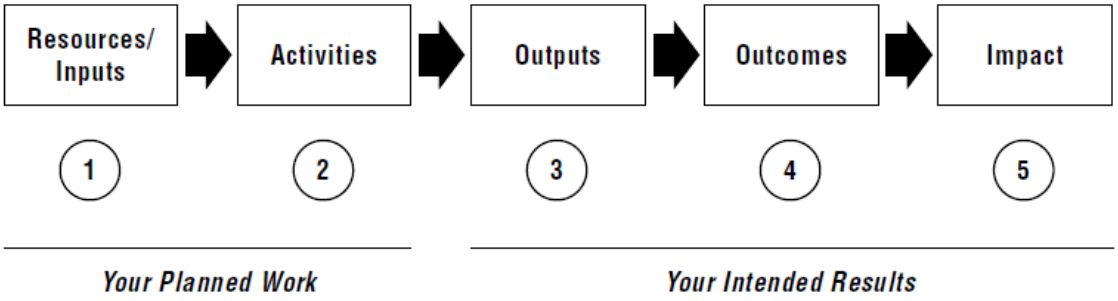

Figure 3.1: Basic Logic model. From W.K. Kellogg Foundation, 2004.

Pefile (2007:661) alternatively illustrated the planning process as a cycle of evaluation, where re-planning can be done if there are indications that a project is not going according to plan (figure 3.2).

The planning models of W.K. Kellogg (2004:2) as well as Pefile (2007:661) serves as examples of how simple or complicated planning for M&E can be depending on the application and need. Important to understand is the importance of planning for results.

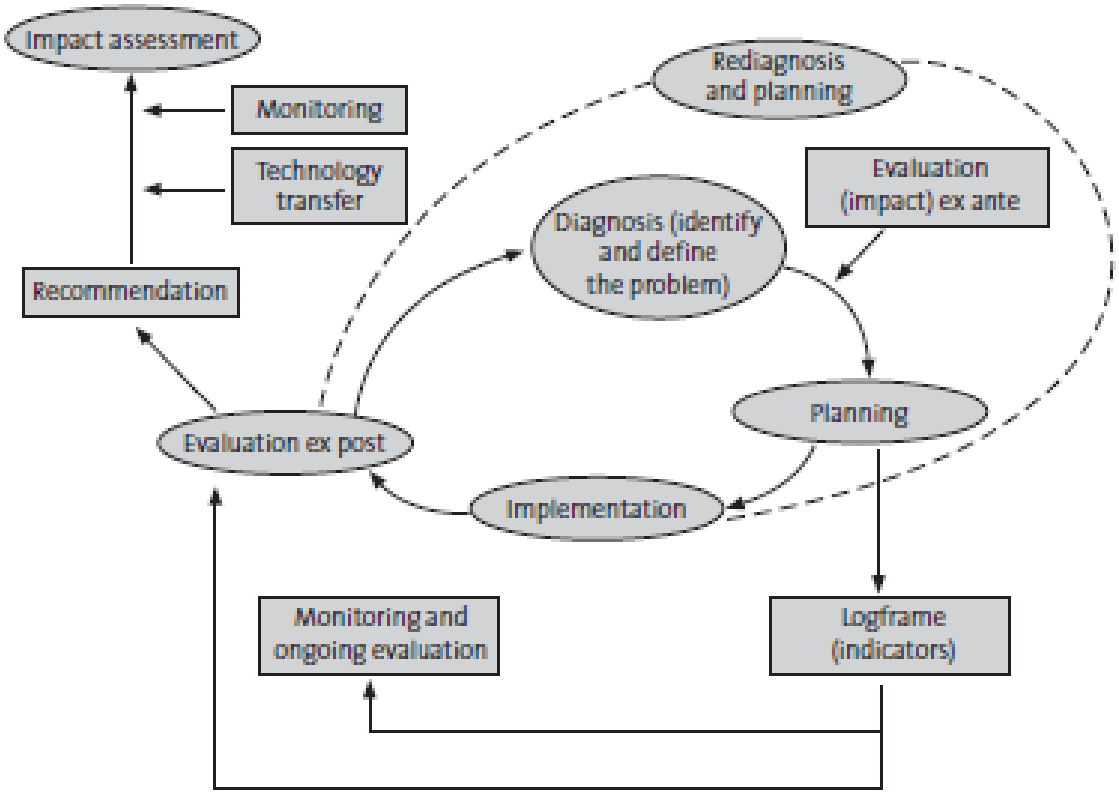

Figure 3.2: Example of a comprehensive M&E and IE framework. From Pefile, 2007.

Subsequently, at the end of an intervention or programme it is logical to want to evaluate the success of such intervention. An impact evaluation (IE) specifically examines which part of an intervention worked and did not work and also the possibility of why it worked or did not work. (RSA 2007: 2). This assumption would be based on the validity of the intervention's underlying theories and assumptions. Therefore, IE basically evaluates how community and target groups has been influenced, based on the achieved outcomes.

The W.K. Kellogg Foundation (2004:2) defines IE as the fundamental intended or unintended change as a result of programme of intervention activities within 7 to 10 years. With the time indicated it would necessarily mean that this evaluation should occur at the end of an intervention.

However, Rogers (2012: 2) indicated that, although impacts are usually understood to occur later in the timespan of an intervention, as defined by W.K. Kellogg (2004), it can be a tool used as an intermediate outcome assessment. The use depends on the stated objectives of an intervention, specifically if it is important to have an earlier indication whether a project is working or not.

Furthermore, outputs and outcomes, as indicated in figure 3.1, are the most important aspects of evaluation in government as indicated by the South African Department of Planning, Monitoring and Evaluation (DPME) with IE as the extent to which outputs have been achieved by the specific government entity (RSA, 2014:2). It is therefore important for a government department or programme to know its desired outputs and outcomes and to monitor these effectively, as the information gathered from monitoring and evaluation is important for IE (RSA, 2014: 2).

Baker (2000: 1) refined the definition of IE to ascertain whether an intervention had the desired effects on individuals, households and institutions and whether the effects can be attributed to the intervention. An important aspect that she also indicates is that IE can point out unintended consequences on beneficiaries, whether positive or negative.

O'Flynn (2010: 5) further indicated that if IE should be deemed useful for learning and accountability, project logic should not be seen as the means to an end, but focus should be placed on changes to the target groups. It is therefore important to define the areas of enquiry, or more simply stated, which questions should be asked to address IE? The following was indicated (O'Flynn (2010: 2) :

- What has changed?
- For whom?
- How significant was it?
- Will it last?
- In what ways did we contribute to these changes?

Similar to the previously mentioned authors, Perrin (2012, 6) defined IE as a linkage of cause-and-effect factors to an intervention. He was however of the opinion that just knowing the impacts is insufficient. It is more important to be able to apply the findings to other similar studies. It is therefore important to know "why" and "how" the resultant impact came about.

Subsequently it is important to mention Stern, Stame, Mayne, Forss, Davies and Befani (2012: 5). These authors indicated that the definition of IE depends on how impact is defined, as this definition determines the scope and content of IE studies and the important aspects of such studies. This definitely has merit, as there could be a vast array of interventions, specifically in the South African context. Just comparing the aim of this study, to study training interventions, and for example, the impact that a housing project has on people's lives already has differences in approach.

In addition, Perrin (2012: 2) indicated that M&E should be part of the organisational culture, where the implications of evaluations should be acted upon as part of continual improvement. M&E should therefore not be the sole responsibility of the evaluation specialists, but all programme staff should play an active role in the processes. This is important to ensure that IE are addressing the correct questions as programme staff is directly involved in the implementation of the intervention and knows what is intended.

Subsequent to the stated information, it is important to unpack the importance of IE further, or in other words, why do we need to perform IE? It is essential to understand

the context of IE, as this has an implication on the purpose and the eventual evaluation programme (Bonbright, 2012:6). Table 3.1 indicates possible scenarios and the context of IE.

Table 3.1 The context of IE

Why do IE?	When is IE most useful?
To decide whether or not to continue or expand an intervention	Interventions where there is not a good understanding of its impact, and better evidence is needed to inform decisions about whether to continue funding them or to redirect funding to other interventions.
To learn how to replicate or scale up a pilot.	Innovative interventions and pilot programmes that, if proven successful, can be scaled up or replicated.
To learn how to successfully adapt a successful intervention to suit another context.	Periodic evaluations of the impact of a portfolio of interventions in a sector or a region to guide policy, future intervention design and funding decisions.

To reassure funders, including donors and taxpayers (upward accountability), that money is wisely invested.	Interventions with a higher risk profile, such as a large investment (currently or in the future), high potential for significant negative impacts or sensitive policy issues.
To inform intended beneficiaries and communities (downward accountability) about whether or not, and in what ways, a programme is benefiting the community	Interventions where there is a need for stakeholders to understand each other's' contributions and perspectives better.

(Source: Bonbright, 2012)

The evaluation context that Rogers (2012:4) indicated is important for this study. The EATI is an intervention that is not near its end, but it is important to ensure its sustainability with regards to its mandate and importance in poverty alleviation. All of the categories in table 3.2 are relevant to the EATI, and therefore the importance of an IE and a QA system of M&E. This summarises the definitions and context of M&E and IE as discussed.

Table 3.2 Examples of key evaluation questions for IE.

Category	**Questions**
Overall impact	- Did it work? Did [the intervention] produce [the intended impacts] in the short, medium and long term? - For whom, in what ways and in what circumstances did [the intervention] work? - What unintended impacts (positive and negative) did [the intervention] produce?
Nature of impacts and their distribution	- Are impacts likely to be sustainable? - Did these impacts reach all intended beneficiaries?

Influence of other factors on the impacts	- How did [the intervention] work in conjunction with other interventions, programmes or services to achieve outcomes? - What helped or hindered [the intervention] to achieve these impacts?
How it works	- How did [the intervention] contribute to [intended impacts]? - What were the particular features of [the intervention] that made a difference? - What variations were there in implementation? - What has been the quality of implementation in different sites? - To what extent are differences in impact explained by variations in implementation?
Match of intended impacts on needs	- To what extent did the impacts match the needs of the intended beneficiaries?

(Source: Rogers, 2012)

Taking cognisance of the complicated nature of IE, it is necessary to mention that due to certain factors it is difficult to perform proper IE. Performing an IE could be an expensive process, as indicated by the World Bank (2004:22), Vaessen, Garcia and Uitto (2014: 70) and Bamberger (2012:13) to mention a few authors. Often the resources needed, as well as the complication of having the participation of beneficiaries and experienced evaluators are big challenges.

Subsequently, different methods of performing IE are accepted, albeit with varying pros and cons. The World Bank (2004:24), Bamberger (2012:3), Leeuw and Vaessen

(2009:35) as well as Vaessen *et al*. (2014:70) indicated various methods to perform IE that could satisfy the evaluation questions as per table 3.2. Included in these methods is traditional IE, which could be more time-consuming, as well as more rapid methods. These rapid IE designs include, but are not limited to (The World bank, 2004:23):

- Randomized pre-test post-test evaluation.
- Quasi-experimental design with before and after comparisons of project and control populations.
- Ex-post comparison of project and non-equivalent control group.
- Rapid assessment ex-post impact evaluations.

With some of the difficulties or complications identified with IE, the following section will briefly explore the difference between operational evaluation (OE) and impact evaluation (IE). It is important to identify the basic differences, as this would have significance with regards to the eventual evaluation that is performed and the deductions made from such an evaluation.

3.3 THE DIFFERENCE BETWEEN IMPACT (OPERATIONAL/PROCESS) EVALUATION AND IMPACT ASSESSMENT

In literature, OE is often referred to as "impact" and the difference between IE henceforth explained (Khandker, Koolwal and Samad, 2010: 7; Morra-Imas and Rist 2009: 9). It is therefore important to briefly discuss the difference as it can be confusing.

Baker (2000:1) indicated that there are different components to a comprehensive evaluation, of which OE and IE are part of. The definition of OE is henceforth described as focussing on programme operations and problems in service delivery, thus the implementation of an intervention.

Similarly, Khandker, *et al.* (2010: 7) indicated that OE examines programme effectiveness and the possible gaps between planned and realised outcomes. The authors furthermore expanded on their statement to include that OE is an assessment based on the operational indicators included in the M&E framework, such as project objectives, indicators and targets.

Morra-Imas and Rist (2009: 9) furthermore described OE as a formative evaluation process that looks at project implementation as well as operational logic. OE therefore is conducted during the implementation phase of an intervention.

On the other hand, Khandker *et al.* (2010: 18) indicated that IE is done to determine the intervention effects and to what extent the intervention effect can be contributed to the programme and not to other factors. The authors stated that OE and IE are complimentary as the processes follow each other. OE would therefore be the baseline for IE as the information generated could be useful for interpretation of IE results.

Similarly, Baker (2000:1) indicated that IE is done to determine if the intervention had its desired effects on the beneficiaries and if it is due to the intervention. Morra-Imas and Rist (2010: 10) concurred with the explanation and indicated that IE is done at the end of an intervention, to determine the achieved results, although IE can also be done mid-way through the life of a programme.

Consequently Morra-Imas and Rist (2009: 9) described OE as a formative evaluation process and IE as a summative evaluation process. The difference in formative and summative evaluation is subsequently summarised in table 3.3, indicating the specific focus of each as also described in this section.

Table 3.3 The difference between formative and summative evaluation

Evaluation	**Focus**
Formative	- Focus on project, programme and policy implementation and improvement
Summative	- Focus on results - Enable people to make decisions regarding continuing, replicating, scaling up, or ending a given project, programme, or policy

(Source: Adapted from Morra-Imas and Rist: 2010)

The importance of evaluation, and IE specifically was indicated in this and the previous sections. The following section will subsequently describe how and in which context evaluations, specific in the public realm, could and should be applied and the importance thereof.

3.4 THE IMPORTANCE OF OUTCOMES-BASED M&E

Levin (2015: 29) stated that "outcomes-based evaluation can change the way in which governments work." What does this entail and why is it important? The DPME (RSA, 2011b: 5) indicated that achieving the desired outcomes that government intend, need to be preceded by sound planning. The planning should therefore clearly define the desired result in order to evaluate the outcomes and impacts. Therefore, the focus of governments should be results-based to the benefit of communities.

W.K Kellogg (2004: 5), Morra-Imas and Rist (2009: 106) as well as Levin (2015: 29) concurred that governments should direct interventions or programmes towards the development and betterment of communities, in effect social change. Stated differently, implementation and evaluation of interventions, specifically in the public sector, should be done with outcomes in mind that would be of benefit to the broader community.

Morra-Imas and Rist (2009: 106) also indicated that performance management systems (M&E) are in response of pressure on governments to improve their performance, specifically within developing countries. Furthermore, these systems within government should be able to track the efforts of public reforms and assess whether the interventions have been successful or not.

Furthermore, it is important to measure how well in institution is achieving the intended outputs and impacts and to what extent the processes are working (RSA, 2007:1). Performance information is therefore important, with the provision that what gets measured is in actual fact what is being done. The National Treasury of South Africa is subsequently of the opinion that institutions are more likely to perform according to what is expected of them when they know what is being monitored. The risk of this assumption is that departments and entities within government would perform only for

compliance rather than towards making a difference to the lives of the broader community it serves.

It is therefore important to have proper planning and systems in place to ensure that compliance is not the only goal, but rather the achievement of results for improvement. An important difference of how different interventions or projects within government should be planned, implemented and evaluated would be in the process and application of the specific intervention. This would therefore be part of the entire M&E process for that specific intervention, especially the understanding and focus of the goals of such a programme. Levin (2015: 29) stated that the challenge is to ensure that the "marginalised and voiceless", in other words, the communities, are the focus of development.

Lucas and Longhurst (2010: 30) described five purposes that would be important for evaluation purposes, specifically for evaluation of socioeconomic development initiatives. As previously discussed, the purpose and outcomes of such interventions are important within a system of outcomes-based M&E. The purposes described by the authors are as follows:

- Planning/efficiency: ensuring justification for a policy/programme and that resources are deployed efficiently.
- Accountability: demonstrating how far a programme has achieved its objectives and how well it has used its resources.
- Implementation: improving the performance of programmes and the effectiveness of how they are delivered and managed.
- Knowledge production: increasing understanding of what works in what circumstances and how interventions can be made more effective.
- Institutional and network strengthening: improving and developing capacity among programme participants and their networks and institutions.

Therefore, subsequent to international best practice, the South African government has taken a decision to establish an outcomes-based (results-oriented) M&E system as an effort to improve the effectiveness of government. This mandate is situated within the DPME. The results-focused system, as also indicated in the National Evaluation Policy

Framework (RSA, 2011b: 5) is government's commitment to change the lives of its people (CLEAR, 2012: 159). The legislative framework of the DPME will be discussed later in this study, but what is important is the fact that the DPME chose to focus on a weakness in the system, which was indicated as the focus on activities rather than outcomes.

Conversely, Chaplowe and Engo-Tjéga (2007:267) state that outcomes-based M&E systems should be approached with caution. Although stated in a different context, the authors concluded that the priorities of the prescriptive entity, such as a donor or government agency, could become the priorities of programmes, rather than focussing on the outcomes. This could lead to conformity rather than proper implementation.

As indicated by Chaplowe and Engo-Tjéga (2007:267), the EATI, the study unit, could be susceptible to conformity as described. Reason for this statement is that in an evaluability study conducted by the researcher (Hendrikse, 2014: 18) on the EATI, the conclusion indicated a few problems with the M&E system, or more specifically, the lack of an M&E system. Firstly, there was a "lack of clarity about the causal linkages between expected outputs and outcomes". This was mainly because of the ill-defined outcomes within a system where there is no reference to a logical evaluation model, as described by various authors.

The author (Hendrikse, 2014:18) furthermore indicated that there was a discourse between what was agreed to be delivered with the EATI's vision and mission. The vision and mission are based on outcomes and impacts, but reporting was done on outputs. The situation at the EATI therefore makes it difficult to have proper outcomes-based M&E system in place. In short, this could lead to a situation as with the EATI that report on outputs as an easy alternative to comply, rather than risk inefficiency. The focus on the beneficiary needs is therefore not properly served.

Outcomes-based M&E is therefore a step in the right direction in order for the South African government to realise its goal of changing the lives of its people. How the success is evaluated is the challenge. Therefore, the EATI, which is a training institution, has different aspects to its operations that could be evaluated. The focus on its specific programme outcomes should therefore be measured. Should it be training

impact or impact in general as a government entity? The subsequent section will give more clarity on the suitability of the mentioned IE.

3.5 TRAINING IMPACT EVALUATION

Merwin (1992:5) defined (training) evaluation as the means to determine the worth or value of training. Taking this definition, that was used more than twenty years ago, is still a good start to understand the meaning of training impact evaluation (TIE) today.

In recent years, specifically in developing countries concerned with capacity building, training impact evaluation is done to also determine how training has influenced performance in the workplace (Taschereau, 1998:5). In modern times however, the definition of TIE is expanded to include indirect and direct effects of activities and programmes on individual, institutional and policies and more importantly the effect on the community in large.

In cognisance of the above it is therefore fitting to mention the typical functions of evaluation. With regards to government and social impact, TIE is important for accountability to policy-makers and social- improvement and change in general (Descy and Tessaring, 2005:24). Furthermore TIE is important for development as well as knowledge production. Table 3.4 indicates the key questions regarding the typical functions as indicated. It is important to mention this, as the EATI can fit into most of these functions by means of its status as government entity as well as a training institute. It was previously indicated that the EATI has different operational functions, and therefore the indication.

Subsequent to the functions of TIE, it is necessary to define (training) impact evaluation as described by Taschereau (1998:7) as this will set the scene for describing TIE. According to Taschereau (1998:7), TIE assesses the changes that a target audience may have experienced due to programme interventions. This implies that programme objectives are defined to use as basis in order to measure the programme's impact.

Additionally, Huber (2011: 848) indicated that programme impact evaluation may be observed on two levels. On the one level an entire group of participants (collective

impact) or on the individual level. The author furthermore indicated that two kinds of impact may also be observed. One kind of impact, which this study is concerned with, is the change on participant's characteristics, in other words their competencies (knowledge and skills), attitudes, job satisfaction, etc. (Huber, 2011: 848). The second kind is the application of what has been learnt in the intervention. The evaluation action can henceforth be described.

Table 3.4 Typical functions of evaluation

Purpose	**Stakeholder**	**Key questions**
Accountability for policy-makers	Parliaments, ministries	What have been the results? Are they intended or unintended? Are resources well-used?
Development for programme improvement	Project coordinators, partner organisations	How well is the programme being managed? Can it be implemented better?
Knowledge production and explanation	Programme planners, policy-makers, social partners, academics	What lessons can be learnt? Can these lessons be applied elsewhere? How should we do it next time?
Social improvement and social change	Programme beneficiaries and civil society	What is the best way to involve affected groups?

		How can equal opportunities and social inclusion be insured?

(Source: Adapted from Descy and Tessaring, 2005)

Performing TIE is described by Taschereau (1998:7) as well as Parry (1997:4) with the evaluation principles as developed by Donald Kirkpatrick in 1975. Parry (1997:4) describes the four evaluation levels, as per Kirkpatrick, in detail, but Taschereau (1998:7) describes the principles in a more modern and development nature. The four levels of evaluation are: reaction, learning, behaviour and results. More detail is given in table 3.5, where the interpretations from Taschereau (1998:7) and Parry (1997:4) are consolidated. It is however important to note that these authors concur with Kirkpatrick that the training objectives should be the guide to determining impact.

Table 3.5 The four-level TIE approach of Kirkpatrick (1975)

Level	Issue	Question answered/what is assessed?
1	Reaction	How well did they like the course?
		Immediate effects of participants on feelings toward the training
2	Learning	How much did they learn?
		Principles, facts, techniques absorbed by trainees
3	Behaviour	How well did they apply it at work?
		Job behaviour changes
4	Results	What return did the training investment yield?
		Training impact: cost reduction and reduced absenteeism

(Source: Adapted from Taschereau, 1998 and Parry, 1997)

Kraiger, McLinden and Casper (2004:340) also referred to the four-level approach of Kirkpatrick, but also described other models that expanded on this specific model. One such evaluation model is one described by Phillips in 1997 and 2003. The Phillips model included the basic four levels of Kirkpatrick, but also included a fifth level, namely return-on-investment (ROI). The ROI of training interventions has a significant place in modern training impact evaluations, as governments as well as private

companies want to know if their investment into training produces the desired changes in trainees' knowledge and skills.

However, Kraiger *et al*. (2004:338) also indicated that organisations still do not routinely measure impact properly, which implies that there are gaps within the evaluation framework and a lack of information to determine ROI. The most measured issues were training reactions and learning, but behaviour and organisational results were lacking. Reasons given for this phenomenon was lack of know-how on the side of the institution.

In contrast to the four-level approach discussed, Brinkerhoff (2006:305) described a simple evaluation method called the "Success Case Method". It basically evaluated the least successful as well as the most successful trainees and the results subsequently interpreted. This is a simple method, but the authors claim to have success in answering questions on organisational learning and capability to increase performance by training investments.

Hart, O'Brien and Powell (2009: 289) also indicated the organisational learning approach as important. They assumed that action is informed by learning from previous activity. The four-level evaluation approach from Kirkpatrick does however make provision for organisational learning, if one groups it under "results". However, if the know-how is lacking within the organisation, as indicated by Kraiger *et al*. (2004:338), then this learning opportunity will be lost.

It is therefore important to have a systematic approach to TIE, as is the case with the four-level evaluation model of Kirkpatrick, but adding aspects as ROI and organisational learning to the evaluation plan. This would ensure that the modern requirements of TIE are addressed within a tried and tested model.

This section specifically discussed training impact as a method of outcomes/results-based M&E. The conclusion is that information gathered should be used to determine ROI as well as organisational learning, or differently stated, information gathered should be used to improve on interventions as well as apply "lessons learnt" to future interventions. This entails monitoring and evaluating interventions and gathering

significant information that would answer the questions on effectiveness and success. Therefore, a proper M&E tool would be needed. In the following section, the Balanced Scorecard (BSC) will be discussed as a possible tool to address the need as mentioned.

3.6 THE BALANCED SCORECARD (BSC) AS M&E TOOL

As described in the previous section, outcomes-based M&E entails planning and eventually evaluating for results. With IE as the final process to evaluation, it is necessary to gather information throughout the lifespan of an intervention in order to ensure that significant conclusions can be reached. A data or information gathering tool that is frequently used in different sectors is the BSC.

Peters (2014:68) revisited the ideas of a management tool as described by Kaplan and Norton in 1992. These authors developed the BSC with a simple message to managers which stated: "what gets measured gets done." The BSC is therefore a multidimensional management tool that measures performance on multiple levels. In modern business, as well as public management, the complexity of operations requires managers to view performance in different areas simultaneously. Stated differently by Karathanos and Karathanos (2005:222), the BSC enables managers to adjust their strategies and make changes by being able to monitor the implementation of interventions.

With the EATI as an educational institution within government, it has complicated operational processes that are even more complicated due to the lack of guiding legislation within the agricultural education and training sector (Chapter 2). With this in mind, the need for a BSC could be strongly justified.

Karathanos and Karathanos (2005:222) indicated that although the BSC was widely applied in the business sector, it is not widely used in the education sector. This was also indicated by Jonas and Müller (2013: 134) when they indicated that a BSC was needed in public schools. They also indicated that such a tool should be designed on the most simplified scale. Karathanos and Karathanos (2005:229) furthermore indicated that measures within the BSC should be aligned to the organisation's strategic objectives. Within education this would allow the tracking of student progress as well

as improve the institution's capability to improve internal processes that would lead to student performance and development.

It is therefore fitting to expand on the use of the BSC, specifically as it is not widely reported on regarding the use within the education sector. Umashankar and Dutta (2007: 64) conducted a study on HE institutions in India and cited Kaplan and Norton (1996) to expand on the use of the BSC as follows:

- Clarify and update vision and strategic direction
- Communicate strategic objectives and measures throughout the organisation
- Align department and individual goals with the organisation's vision and strategy
- Link strategic objectives to long-term targets and annual budgets
- Identify and align strategic initiatives
- Conduct periodic performance reviews to learn about and improve strategy, and
- Obtain feedback to learn about and improve strategy

The use of the BSC was subsequently adapted by Jonas and Müller (2013: 139) with regards to public schools as well as Umashankar and Dutta (2007: 58) within Indian universities. Kaplan and Norton (1992) described four elements within an organisation that needed to be balanced (Peters (2014:69) as well as the following three needed elements of a good BSC: cause and effect relationships, lead and lag indicators, and linked to financial measures.

These used four perspectives, as described by Kaplan and Norton (1992) and interpreted differently by the mentioned authors are collated as follows (Umashankar and Dutta (2007: 58); Jonas and Müller (2013: 139); Karathanos and Karathanos (2005:69):

- Stakeholders: (satisfaction)/Customer perspective – how do customers see us?
- Managers: (internal processes)/Internal perspective – what must we excel at?
- Employees: (Innovation and learning)/Innovation and learning perspective – can we continue to improve and create value?
- Funders: (financial results)/Financial perspective – How do we look to stakeholders?

The indicated authors (Umashankar and Dutta, 2007; Jonas and Müller, 2013; Karathanos and Karathanos, 2005) used the four perspectives as indicated by Kaplan and Norton (1992) in its simplest form to develop a BSC for their respective study units. The South African government (RSA, 2012:1), through the DPME, subsequently proposed templates that should be used by National departments. The four areas that are used in these templates are: strategic management, governance and accountability, human resource and systems management, financial management.

The above benefits of the BSC are therefore possibly suitable to address the challenges or issues identified by this research study, although the detail of such a BSC would be left to development by the EATI.

In conclusion, with M&E and impact evaluation (IE) discussed, it is deemed important by the researcher to include the legislative framework in which the EATI would need to develop its M&E system as well as possibly its BSC. Therefore, as a government entity bound by legislative guidelines both in HE as well as M&E, it is necessary to briefly indicate the guiding legislation pertaining to monitoring and evaluation within the South African government.

3.7 LEGISLATIVE FRAMEWORK: PERFORMANCE MONITORING AND EVALUATION

With the changing landscape regarding performance monitoring in South Africa post 1994, it is necessary to indicate the legislation that specifically guides performance monitoring and also the need of such guiding documents.

The Constitution of the Republic of South Africa states in section 195, amongst others, that in the principles of public administration "public administration must be accountable (RSA, 1996: 1331)". Together with the Public Finance Management Act (PFMA), the Public Service Act (1994 as amended by Act 30 of 2007) and the Municipal Finance Management Act (MFMA) it constitutes the legal basis for the national evaluation system (RSA, 2011b).

The Department of Performance Monitoring and Evaluation (DPME) now called the Department of Planning, Monitoring and Evaluation as part of the Presidency and its key focus area is to coordinate the national evaluation systems of the RSA. Post-1994 the M&E function was mainly performed in isolated circumstances and driven by departments at the centre of the governance system. This uncoordinated and complex activities were structured when a Government Wide Monitoring and Evaluation (GWM&E) Policy Framework was introduced in 2007 (CLEAR, 2012:145). From this policy framework the DPME was established in 2010.

Furthermore, the National Evaluation Framework was approved by the RSA cabinet in 2011 and its purpose is to "... address the use of evaluation to promote improved impact of government programmes, and at the same time increase transparency and accountability (RSA, 2011b: vii)". The National Evaluation Policy Framework (NEPF) set the foundation for the National Evaluation System (NES) and the implementation of the National Evaluation Plan that determines strategic priorities for evaluation in a specific financial year (DPME, 2014).

The definition of evaluation, as described by the NEPF, is stated earlier in this document, but it is important to include the purpose of evaluation as well. According to Goldman, Mathe, Jacob, Hercules, Amisi, Buthelezi, *et al.* (2015: 2) the purpose of evaluation, as proposed by the NEPF is:

- Improving performance (evaluation of learning).

- Evaluation for improving accountability.
- Evaluation for generating knowledge (for research) about what works and what does not.
- Improving decision-making.

The authors furthermore indicate that the NEPF was a system of compliance, which had to be changed to achieve the purpose of evaluation as described above. This was mainly because of various challenges experienced. Examples of challenges and how they are addressed are given in table 3.6.

CLEAR (2012: 149) indicated that the GWM&E system in its original form was outdated by the time of their study. The focus of the M&E system was therefore redirected to an outcomes-based approach as described earlier. This outcomes-based approach was preceded by a discussion document titled "Improving Government Performance: Our Approach".

The authors furthermore indicated that with this system there seems to be a high level of understanding of challenges various departments face and how different departments affect each other. This was mainly as a consequence of the "inter-departmental and intergovernmental strategic plans for key cross-cutting outcomes." A significant volume of literature was generated on the successes and challenges of this approach, which will be discussed briefly.

Compared to certain international M&E systems, the SA M&E system can be considered as relatively new. The system is therefore evolving to fit the need of the country. The DPME, involving all spheres of government, is constantly re-evaluating the current system, making use of international best-practice to strengthen the application for the SA context.

Goldman, Rabie and Abrahams (2015: 1) gave an overview of the literature that was specifically generated on the state of the SA M&E system. This was done as part of a special edition of the African Evaluation Journal in 2015. The authors again stated that SA has a strong compliance culture, although concerted efforts are made to promote

performance reporting. Performance reporting implies the shift to outcomes- or results-based evaluation, as discussed earlier.

Table 3.6 Key evaluation challenges and how these are addressed.

Challenge	How this is being addressed	Further action needed
Poor programme planning	Development of guideline on planning new implementation programmes approved by Cabinet, as well as design evaluations.	Do audit of implementation programmes in government. Refine course in planning implementation programmes. Develop course in design evaluation and roll out.
Not getting evaluations from some sectors	Raising gaps with Cabinet and proposing possible evaluations for them to select from. Targeted work with areas of low uptake (e.g. health, local government and public service).	Cabinet to consider priorities they would like to be evaluated. Discuss what cross-cutting evaluations are key for local government.
Some departments taking a very long time to procure	DPME to procure wherever possible.	Evaluations where departments procure not prioritised in the NEP but rather included in departmental evaluation plans.
Inadequate supply of strong evaluators	Advocacy work at universities to encourage them to participate.	Develop course to assist researchers to understand evaluation.
	Capacity building work with service providers.	Developing training courses and briefings in 2014–2015. Undertake rating system of service providers and publicise the results.
	Diagnostic on the supply of qualified evaluators.	Fundraising for this.
	New call for evaluation panel in August 2014 to expand the group to draw from.	In process.
Inadequate data for some evaluations to be viable	Developing model for evaluability assessment and apply in 2015–2016.	Work to improve administrative data quality and also programme data collection.
	Encourage all first evaluations to be implementation evaluations, only after which do we consider an impact evaluation.	Departments to plan impact evaluations at programme inception.
Departments taking too long to take forward evaluation results, including improvement plans	Standard now being applied that DPME takes the evaluation to Cabinet. DPME is having to keep reminding departments about completing the improvement plans, and progress reports.	Cabinet to note the problem. Include this in Auditor General monitoring and Management Performance Assessment standards.
Improve communication of evaluation findings	Testing out with next evaluations including policy briefs, seminars and development of a communication strategy.	See how this works and additional inputs needed.
Departments slow to produce improvement plan progress reports	Repeated requests and highlighting the problem.	See whether the Auditor General can audit reporting on improvement plans. Also include in Management Performance Assessment standards.
Additional capacity needed to support provincial and departmental evaluations	Supported two provincial evaluation plans in Western Cape and Gauteng to test the system. Now working with five other provinces.	Strengthen imperative to take forward. In 2016 and 2017 major focus on DEPs.

(Source: Goldman *et al.*: 2010)

Another important remark by the authors was on the use of evidence for policy development. They indicated that interviewees felt that evidence was not used during the agenda setting phase of policy development, which leads to policy failures and weaknesses. Additionally it was indicated that in passing new legislation policymakers failed to learn from past experiences. This is at the heart of why M&E is done, to improve on the current state of affairs, by evaluating what is working and why.

According to Umlaw and Chitepo (2015: 1) much of the changes in legislation concerning M&E in SA were stimulated by pressure on the state by the citizens since 2009. This pressure was in the form of widespread service delivery protests as well as persistent poverty and inequality. This emphasised the importance of intergovernmental cooperation with regard to institutionalised M&E capacities to inform policy and programme development.

As previously indicated, the DPME was established in 2010. The main functions of the DPME are (Umlaw and Chitepo, 2015: 2):

- Assessing the management performance of departments
- Development of an evaluation policy
- Robust M&E related to the achievement of outcomes
- Hands-on monitoring by an inspectorate which has led to the approach of front-line service delivery monitoring
- The recent initiative to strengthen oversight and identify appropriate support strategies for the poor performance of local government

The authors also indicated that the broader focus of the DPME is to "facilitate, influence and support effective planning, M&E of government programmes aimed at improving service delivery, outcomes and impact on society".

Umlaw and Chitepo (2015: 2) further indicated that various reforms regarding M&E have been introduced in government since 1994, mainly to strengthen its systems and operations. The prescriptions and guidelines applicable to which departments are expected to conform are summarised in table 3.7.

Table 3.7 M&E guidelines applicable to the public service.

Document	Instituting department
The policy framework for government-wide M&E	DPME: 2007
The Framework for managing programme performance information	National Treasury: 2007
The role of Premiers' Offices in government-wide monitoring and evaluation: A good practice guide	DPME: 2008
From policy vision to operational reality: Annual implementation update in support GWME policy framework	DPME: 2009
Improving government performance: Our approach	DPME: 2009
The South African Statistical Quality Assurance Framework (SASQAF)	Statistics South Africa: 2010
The National Evaluation Policy Framework	DPME: 2011
The National Development Plan 2030: Our future – Make it work	National Planning Commission: 2012
Generic functions of an M&E component in national government departments	DPME: 2012
Generic functions of monitoring and evaluation components in the Offices of the Premier	DPME: 2012
Generic roles and organisational design considerations for M&E components in provincial government departments	DPME: 2012

(Source: Umlaw and Chitepo: 2015)

In the study that Umlaw and Chitepo (2015:15) conducted, the conclusion was drawn that "departments should shift their focus from activities (and their measurements) to outcomes and impact on society". The authors further stated that if the shift is not done, it would be "more of the same", which would have no impact on society. This is the same conclusion that the researcher came to during his study on the EATI in 2014, where outcomes have been reported as outputs (Hendrikse, 2014: 18).

3.8 DISCUSSION

This chapter discussed important concepts and definitions and its meaning within the context of this study. Basically IE examines which part of an intervention worked, or otherwise, and why. The importance of this is to learn from previous interventions or from decisions on up-scaling or continuation of projects. Also, mid-way during an intervention, changes can be made to the project if it is deemed necessary to ensure success. Most importantly, IE is done to assess whether interventions changed peoples' lives positively or negatively and even whether it was intended or unintended.

Furthermore, it was indicated that it is important to do proper planning before an intervention is implemented, as this could have serious implications when it comes to the stage of IE, either midway or at the end of an intervention. Part of the planning process would be to develop a comprehensive M&E framework, with the end-goal of having an IE. This would increase the chance of implementing a successful project, as the M&E framework should have built-in processes and opportunities to change the intervention when problems are encountered.

Therefore it was necessary to discuss the difference of OE and IE. The reason for this was to clear the confusion that could exist due to the fact that OE are sometimes referred to as impact. The main difference is in its application as formative and summative evaluations respectively, where OE is classified as formative evaluation and IE as summative. Formative evaluation basically focusses on project implementation and improvement, whereas summative evaluation focusses on results.

It was consequently necessary to explore the importance of outcomes-based M&E as an effort by the South African Government to improve the effectiveness of government and therefore the lives of its citizens. Training impact evaluation was subsequently discussed as an outcomes-based model applicable to the EATI. As meaningful IE is not possible without an effective M&E programme (Perrin, 2012:2) the BSC was proposed and discussed as a tool to gather information needed during the lifespan of an intervention, as a means to ensure that data can be used to draw significant conclusions from IE.

With all of the above in mind, it was subsequently important to explore the South African M&E guidelines and legislation within the scope of this study. What was concluded is that the South African M&E system is an outcomes-based system that was built on international best-practice. Within the short time of its existence, it has accomplished a lot, with good international recognition. The evolution of the South African M&E system has however not been without challenges, as can be expected.

To summarise the essence of this chapter, it explored the importance of M&E systems within government and the eventual assessment of interventions or projects initiated within the different spheres of government. The most important aspect of government interventions is the benefit to the broader community it serves as well as assurance that taxpayers' money is well spent. For this assurance, it is therefore necessary to have a system in place that would ensure that the outcomes are validated and believable, which means that impact assessments/evaluations (IE) should be done.

3.9 CHAPTER SUMMARY

In this chapter, the meaning, definition and importance of IE were explored as well as the context in which IE could be conducted. Also, that IE is an important part of government's assurance that interventions are implemented to the benefit of the broader society. The important difference between the OE process evaluation and IE was discussed in this context as well.

Furthermore, the importance of Outcomes-based M&E was discussed and the application of the concept, as training impact evaluation (TIE), was expanded on as the background to IE within the EATI. An important aspect coming from the literature was that IE follows M&E, but that initial planning is important to ensure a system that would give way to successful IE. The BSC as a M&E measurement tool was subsequently discussed.

Additionally it was indicated that legislation plays an important role in planning and developing M&E systems. Important to note is that the South African Government is attempting, by means of M&E legislation to shift the focus of evaluation from activities to outcomes and impact on its citizens.

The next chapter will give an outline of the research design and methodology, which will include sampling methods, data collection and capturing, data analysis, as well as presentation and discussion of results.

CHAPTER 4:
RESEARCH DESIGN AND METHODOLOGY: DATA COLLECTION, ANALYSIS AND FINDINGS

4.1 INTRODUCTION

The aim of the study, as explained in Chapter 1, was to evaluate the impact of the EATI's HE programmes specifically pertaining to its goals, which aims at producing graduates that can contribute to economic development in their communities and in broader society. Subsequently, the research objectives were formulated as follows:

- To assess the impact that the HE programme at the EATI has made towards employment of graduates from 2008-2003
- Evaluate the perception that graduates have regarding the quality of the training programmes
- Use the data from the IE to propose or design an M&E tool to monitor the outcomes of the EATI

This chapter therefore gives an outline of the research methodology employed in addressing the research objectives as well as the units of measurement. The data collection methods are subsequently explained after which the data obtained are analysed, interpreted and discussed.

An impact evaluation was indicated in the research proposal as the method that will be used for data analysis and interpretation of this study, which was specific to the EATI that is the study unit. Therefore, a case study with a qualitative and quantitative approach was applied. Questionnaires were used to elicit information from graduates and structured interviews targeted "key informants" to get their opinion on the implied outputs, impacts and quality of the programme.

The research design would hence focus on the impact that the training programmes at the EATI had on graduates, PDIs as well as non-PDIs, which would be discussed by means of addressing the research objectives as indicated.

4.2 RESEARCH METHODOLOGY

A training impact (outcomes) or similar study has not been recorded for the past 15 years at the EATI and the researcher was of the opinion that the mixed methods approach would be appropriate for this study. This would ensure that a broad overview of the current state of affairs at the EATI should be explored, specifically regarding graduate employment as discussed in the objectives (Chapter 1). Also, as there are effectively no baseline data available for comparison, the mixed method approach was deemed appropriate. Bamberger (2012:1) indicated that mixed method evaluations during impact evaluation can integrate quantitative and qualitative approaches to theory, date collection, data analysis and interpretation.

Mouton (2012:160) indicated that the quasi-experimental design type is basically regarded as appropriate for impact assessments. The World Bank (2004:23) indicate that although the randomised evaluation designs (quasi-experimental), involving control groups at two or more points in time, provide the most reliable results, it is often not possible or feasible. This is mainly due to cost, time or methodological and ethical constraints. Baker (2000:24) also indicated that random and before-and-after methods take longer to implement than ex-post approaches. Before-and-after approaches need baseline information and more time for completion.

Therefore, as there was no baseline information available, as well as time and cost constraints, and therefore only study groups that were affected by the intervention could be evaluated, the rapid assessment ex-post impact evaluation was deemed as appropriate. Ex-post evaluation is often used as a method of evaluation after the intervention has been completed (RSA, 2011b: 4).

Additionally, Stern *et al.* (2012:22) indicated that time is needed for impact to occur, which implies that evaluations usually addresses intermediate or “early” outcomes. In the case of the EATI it is an ongoing intervention, although the intervention is completed for the graduates that are used in the evaluation and therefore the ex-post method is deemed as appropriate.

The ex-post method relies on the concept of triangulation to compare the quantitative data (group data) with opinions of "key informants" (qualitative data) as well as information available from secondary sources (World Bank, 2004: 24). Furthermore, it can be used to allow groups to identify changes resulting from the project, such as the strengths and weaknesses of the intervention

Triangulation is subsequently described by Nastasi, Hitchcock and Brown (2010: 4) as a method where researchers seek to verify or corroborate results across different methods as in the case where qualitative and quantitative methods are combined. Stated differently, triangulation are used to focus on the same research question from different perspectives with alternative explanations anticipated (Ton, 2012: 8). This aims to improve the validity of the evaluation's conclusion.

Bamberger (2012: 4) furthermore indicated that triangulation enhances the credibility of evaluations by comparing information obtained from different data collection methods. If findings from different sources agree, it increases the validity of findings.

Stern *et al.* (2012: 32) however summarised the concept of triangulation somewhat differently, which fits in with this study on the EATI. They made an example on the corroboration of results by means of a housing project. They were of the opinion, that if beneficiaries indicated that the project's services, such as transport, were good or bad, the results could be cross-checked by evaluating quantitative data on coverage and accessibility of the transport service. If the aims of the study are therefore cross-checking, an approach of parallel findings could be employed.

Leeuw and Vaessen (2009:36) furthermore referred to triangulation as looking at things from multiple viewpoints as a method to overcome challenges in evaluations that rely on a single theory, method or set of data. This mixed method approach is thus used for the purpose of breadth and depth understanding and corroboration. Triangulation, as used in this study, is therefore a concurrent mixed method approach, which implies that the qualitative and quantitative data are collected and analysed in parallel, after which the data is merged in order to develop a more complete understanding of the results obtained.

The research design is illustrated in figure 4.1 with the aspects of qualitative and quantitative data collection as well as the secondary data set incorporated. The secondary sources referred to in the study were derived from Chapters 2 and 3, where it was indicated that a logical model is needed for successful impact evaluation. The researcher therefore used official documents from the EATI, specifically the 2013-2014 Performance Auditing Business Plan (EATI, 2013) to analyse the performance evaluation cycle of the EATI and to compile a logical model. Other documents consulted were the Departmental Annual Reports of the periods that this study was placed in.

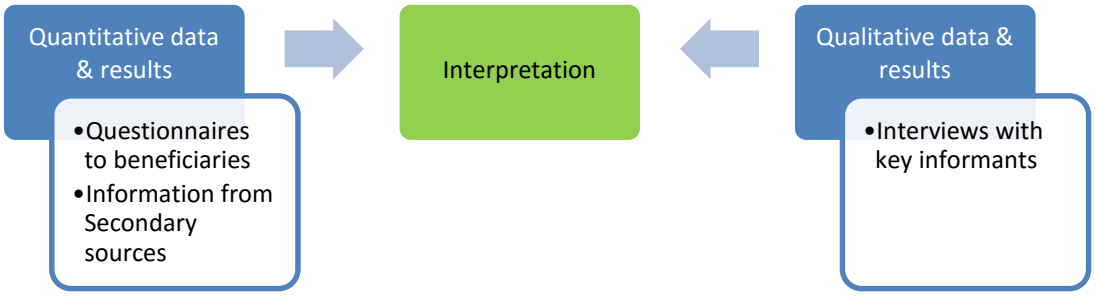

Figure 4.1: Triangulation research design utilised. Adapted from (Nastasi, Hitchcock and Brown, 2010)

The quantitative and qualitative design components of the study unit will subsequently be discussed with reference to the research design indicated.

4.2.1 Quantitative research design component

According to Welman, Kruger and Mitchell (2005: 183) a form of measurement must be involved when investigating changes to units of analysis, compared to the dependant variable. Measuring variables involves methods and techniques to obtain data in order to investigate the research question. A questionnaire is one of the recognised sources of information to obtain this data and involves asking key questions to gather information to analyse the variances in data statistically. This is done by means of coding and thereafter it is possible to make sensible deductions from data obtained (Welman *et al.*

(2005: 224). The quantitative part of the study is therefore done by means of structured questionnaires directed at the graduates as per specific year groups as indicated.

4.2.2 Qualitative research design component

The rapid assessment ex-post impact evaluation approach that was chosen for this study, has a qualitative component that is specific to entice information from so-called "insiders or key-informants". It is indicated that the qualitative component is important as the quantitative component is not compared to a control group.

Welman *et al.* (2005: 7) described the qualitative approach to research as research on experiencing human behaviour. The key informants in this study are regarded as the management unit of the EATI and include the director and unit managers. This group of individuals is the programme implementers and it is assumed that they are aware of the outcomes of the programme, which would give insight into the deductions made from the quantitative component of the study.

With the above literature in mind, structured interviews were used to elicit the information from the mentioned persons. The information investigated was on the QA of the HE programmes at the EATI, its measurement and the perception of the success of the reached outcomes. With a structured interview a collection of questions, called the interview schedule, is put to the subjects and the responses recorded (Welman *et al*., 2005: 165). The interviewer is restricted to the questions on the interview schedule as well as the order in which it is posed to all respondents. This implies that there is very little freedom to deviate from the questions, although there are social interactions where explanations must be provided by the respondent.

4.3 UNITS OF MEASUREMENT

The three accredited Higher Education Programmes of the EATI, as described in chapter 1, were included in the study. The study subsequently focussed on students that obtained their qualifications in Higher education at the EATI from 2009 until 2013. The contact details of all the students were obtained from the official graduation documents and the amount of students verified by means of the Departmental Annual Reports

(WCDoA, 2008-9 to 2012-13). The population size was therefore confirmed as 555 graduates for the five years (table 4.1).

Subsequently, a probability proportionate to size stratified random sampling approach was followed. This sampling method is appropriate in this study, as the graduate population is naturally stratified in terms of gender, race, etc. Welman *et al*. (2005: 61) indicate that populations composed of various, clearly recognisable, non-overlapping subpopulations that differ from one another in terms of a specific variable are called strata (singular stratum). According to the authors, stratified random sampling has two advantages:

- In a random sample from a normal population that is stratified in terms of gender, the probability of a sample consisting of members of one only gender is zero.
- In order to ensure that important strata are represented in the sample, stratified random sampling requires a smaller sample than random sampling. Stratified random sampling requires smaller samples than simple random sampling in order to obtain valid results.

The reason for this sampling method was therefore specifically to ensure representativeness of both non-Previously Disadvantaged Individual (non-PDIs) and Previously Disadvantaged Individuals (PDIs) student groupings. The authors furthermore indicated that the use of random stratified sampling ensures representativeness, irrespective of sample size, as it is been built into the strategy from the start.

The total size of the population, counted as 555, was deemed low by the researcher, specifically if doing an IE. Table 4.1 indicates the total number of graduates for the various years contained in the study. Duplicates were present because of graduates completing more than one HE qualification within the timeframe of this study. This is specifically true for the Higher Certificate students also completing a Diploma, as explained in chapter 1 of this study. The total population was therefore 527 after discarding the duplicates.

Table 4.1 Graduates per financial year

Financial year	**Number of graduates**
2008/09	108
2009/10	115
2010/11	112
2011/12	118
2012/13	102
Total	**555**

(Source: WCDoA: 2008-2013)

Consequently, a sample size of 20% was used for PDIs versus non-PDIs, mainly because the total PDI graduates were only 25% of the total graduate population. This was important as the study aimed to compare PDIs versus non-PDIs as part of objective 1.

A stratified list, separated on the element of political classification (PDI versus non-PDI) was compiled from the contact list obtained from the EATI database and verified from the official graduate booklets obtained from the EATI. With 134 PDI graduates and 393 non-PDIs, a random list of both groupings was generated by means of SPSS software. Therefore a random list of 20% was generated for the 139 as well as the 393 graduates respectively, with a total sample population of 27 PDI graduates and 78 non-PDI graduates. Figure 4.2 illustrates the final stratified sample as discussed.

The foreseen challenge, however, was that the database was not updated and there was a possibility that the details were outdated, as explained in the next section.

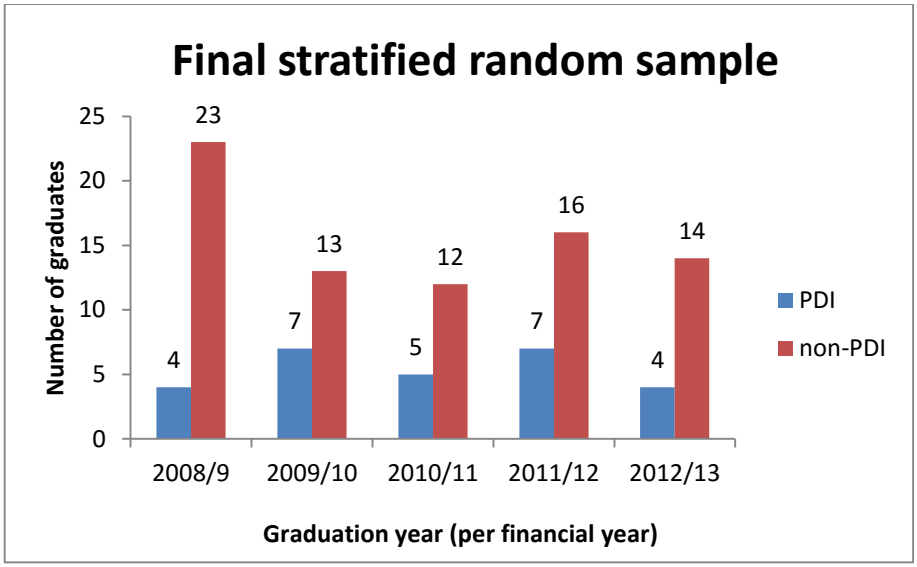

Figure 4.2: Final stratified random sample (source: author)

4.3.1 Sample size and data collection challenges

For the quantitative part of the study, with the limited population size at only 555, a 20% sample was used. With students having completed more than one HE qualification in the years of this study, the sample of 111 was reduced to 105 with the exclusion of the duplicates, as indicated in the previous section.

The contact list was acquired from the EATI and all the graduates were contacted by the researcher. The EATI's database is however not up to date and only 37 of the available numbers were still in service. Some of these telephone numbers were the contact detail of the parents and the graduate's detail could thus be obtained. Two parents indicated that they had no contact details of their sons or daughters, as the latter were overseas and one refused to give any information.

Subsequently, questionnaires were sent to all 37 e-mail addresses obtained. The strategy was to entice participants to complete the questionnaires telephonically, but only one agreed. Eventually 17 completed lists were received with a response rate of 16,2%. At least two reminders were sent via e-mails and SMSs.

With the qualitative study component, the management team of the EATI was targeted with 7 potential interviews. Participation was granted by the Chief Director of the

institution, but participation was voluntary. Five persons agreed to be interviewed, with one declining as a result of workload and the last person altogether irresponsive. A response rate of 71,4% with such a small sample size was deemed acceptable by the researcher.

4.4 DATA COLLECTION METHODS

A structured questionnaire was used for both the quantitative and qualitative data collection aspects of the study. For the quantitative study, the focus was mainly to address objective one, regarding the training outcomes, specifically regarding employment within agriculture as a result of skills and knowledge gained at the EATI.

The qualitative data collection was done by means of structured interviews aimed at the management team of the EATI. These officials are seen as key informants or insiders that would be able to expand on information that would assist in interpreting data gained from the quantitative study. The data collected was on QA of the HE programmes at the EATI, its measurement and the perception of the success of the reached outcomes.

4.4.1 Quantitative data collection: questionnaire and secondary data sources

The questionnaire developed for the quantitative data collection could only be done on interrogating secondary data sources, specifically the logic model of the EATI. As a logic model did not exist, the researcher had to develop a usable logical framework with which to develop the questionnaire. The document used was the 2013-14 Performance Auditing Business plan of the EATI (EATI, 2013). The aspects used were links to National Outcomes 4, 5 and 7 as well as Provincial Strategic Objectives 1, 9 and 11. A usable logic model is depicted in figure 4.3.

Baker (2000: 35) indicated that questionnaire design is important to the validity of data collected. The author also indicated that there are four general types of information that is needed for impact evaluation. The type applicable to this study is:

- Outcome variables to measure the effects of a project, including immediate products, sustained outputs or the continued delivery of services over a long period, and project impacts such as improved income and employment.

The questionnaire was therefore developed using multiple-choice questions as well as five-point Likert scale questions. Multiple-choice questions were used to collect the respondents' demographic information, specifically their opinion on the impact that the training of the EATI had on their livelihoods. Likert scale questions were used to satisfy the impact/outcome indicators.

According to Brill (2008: 2) the Likert scale is the most commonly used measurement tool for attitude measurement. Furthermore, it "consists of multiple items that are typically summed or averaged to produce a more reliable measure than could be obtained by use of a single item". The Likert scale methodology was thus appropriate for this type of study. The five-point response method was employed, with Strongly agree, Agree, Uncertain/No opinion, Disagree and Strongly disagree used as descriptors of agreement or otherwise.

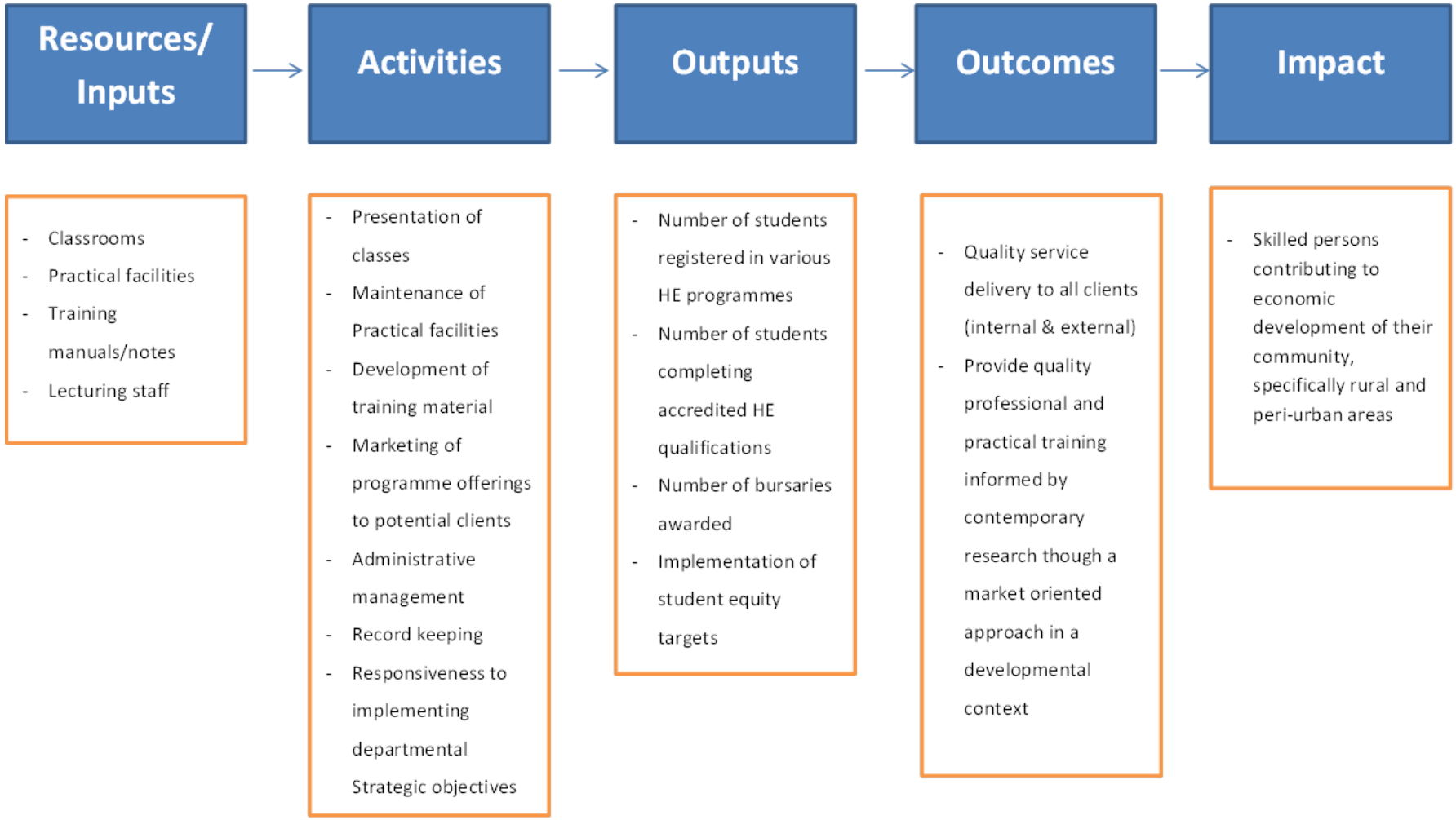

Figure 4.3: Logic model of the EATI (source: author)

After sampling and consequent gathering of contact details, the identified participants were contacted telephonically or by means of SMSs (short message service) in order to verify details and acquire e-mail addresses to ensure that questionnaires are delivered to the correct participants. The researcher hereby asked permission of participation and enquired whether the self-administered questionnaire could be sent for completion. The questionnaire would be made available in English as well as in Afrikaans as an alternative.

Unfortunately, one week after sending off such SMSs the response was very poor. Only eight from a possible 105 was returned. It was subsequently decided to apply the structured telephonic interview method. Although there were risks involved with this method, the possibilities of increased participation were contemplated. A drawback that was considered was that the respondents may have been suspicious of the interviewer's intentions, possibly with fear of having a salesperson contacting them (Welman *et al*., 2005: 165).

The strategy therefore employed was the following:

- Contacting the participants telephonically using the telephone numbers on the EATI database.
- When the participants were confirmed, they were asked whether they would like the questionnaires to be sent to a current e-mail address or preferred completing the questionnaire at that moment.

The researcher contacted all the available contact numbers on the EATI contact list. Contact detail of certain students was in actual fact the detail of parents. Subsequently the correct details of the students were obtained and the questionnaires sent for completion. Thereafter the data was interpreted with specialist assistance from a qualified statistician from Stellenbosch University.

4.4.2 Qualitative data collection: structured interviews

The structured interviews were conducted on site at the EATI. The questionnaires were only made known to the participants at the arranged session, although some participants

requested it be made available beforehand. The questionnaires (interview schedules) were only available in English and therefore the interviews were conducted in English, but the interviewee could answer in Afrikaans as preferred. Where needed, the interviewer translated questions into Afrikaans for clarity, being mindful of not leading or influencing responses. Interviews were recorded with a digital recorder to validate responses when the interviewer was unsure of notes made during the interview.

The entire management team were included for interviews as they are only seven in total. Permission to contact the participants was given by the chief director of the programme, but respondents were given a choice of participation. Subsequently interviews were conducted with sessions scheduled for 30 minutes.

4.5 DATA ANALYSIS, INTERPRETATION AND DISCUSSION

In this section responses obtained from questionnaires from graduates as well as the structured interviews with the management team of the EATI will be presented and discussed. The data will be presented in the form of basic tables, charts and comparisons. In most cases the specific questions with the answer options are depicted as tables.

4.5.1 Quantitative data collection: Graduate Questionnaire

The graduate questionnaire was divided into three sections, each with a different focus. Section 1 specifically requested information on graduate employment as per objective one of this study. Section 2, also partly covered objective one of the study, but also covered objective two regarding perception of quality (benefits) of the programme. Section 3 of the questionnaire specifically requested information on the skills and knowledge that graduates gained at the EATI (impact), but also with regards to their perception of quality of the HE programmes of the EATI. Data will therefore be presented and briefly analysed. A discussion will follow the presentation of results.

4.5.1.1 Demographics

This section of the graduate questionnaire is indicated as Section 1 and contains the detail of the graduates with regard to their current work status as well as other biographical information important to this study. An important aspect of this study was to determine whether there were differences regarding employment of graduates from previously disadvantaged racial groups (PDIs) and those not classified as such (nPDIs). With this comparison, the author felt the need to also investigate whether this could be the case regarding gender, as there is a general perception within agriculture that it is a male-dominated environment.

In table 4.2 the biographical information regarding age and gender is summarised. It indicates that 71% of respondents were male and 29% female with the age distribution of 18% (20-25 years), 24% (26-30 years), 24 % (31-15 years) and 35% (older than 36 years). The gender distribution of the total population (527) is 69,3% (365) male and 30,7 % (162) females. This distribution is similar to the gender distribution of the respondents. Unfortunately the database of the EATI was not complete; therefore the age category of the total population could not be compared to that of the respondents.

Table 4.2: Biographical information of graduate respondents

Category		**Count**	**Percentage**
Age	20-25 yrs	3	18%
	26-30 yrs	4	24%
	31-35 yrs	4	24%
	Older than 36 yrs old	6	35%
Gender	Male	12	71%
	Female	5	29%

(Source: author)

Figure 4.4 depicts the gender distribution of respondents classified as PDI or not. It is indicated that of the 12 male respondents, 8 (66,7%) are nPDI and 4 (33,3%) PDI. The females are indicated as 3 (60%) nPDI and 2 (40%) PDI.

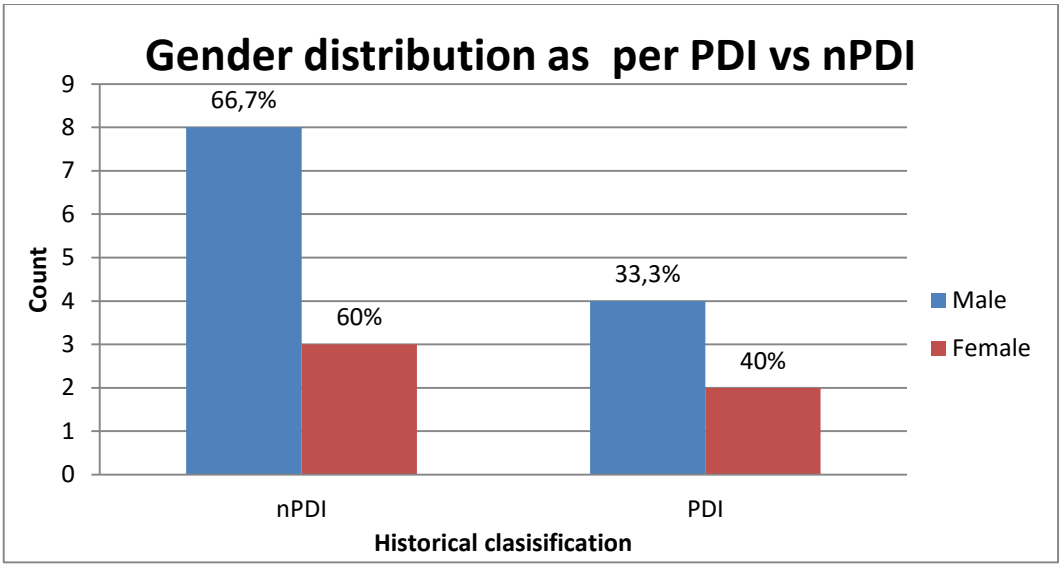

Figure 4.4: Gender distribution as per racial classification

With cognisance of the initial aim of employment, figure 4.5 further engages this concept and presents the type of employment as per gender and historical/racial classification. All the responding PDIs indicated that they have permanent employment, which is also the case with all females, irrespective of classification. With the nPDI males, only 6 (75%) are permanently employed, with one indicated as having a fixed-term contract and the remaining male, self-employed. These jobs were indicated throughout the spectrum of possible job titles or areas. Distribution is insignificant and therefore no deductions could be made from the data.

Respondents were also asked to indicate their previous experience as an additional indicator of their employment. Table 4.3 indicates the experience of respondents prior to commencement of studies at the EATI. A significant amount of students (53%) had more than 6 years of experience with 29%, 6% and 12% having less than 1 year, 1 to 2 years and 3-4 years' experience respectively.

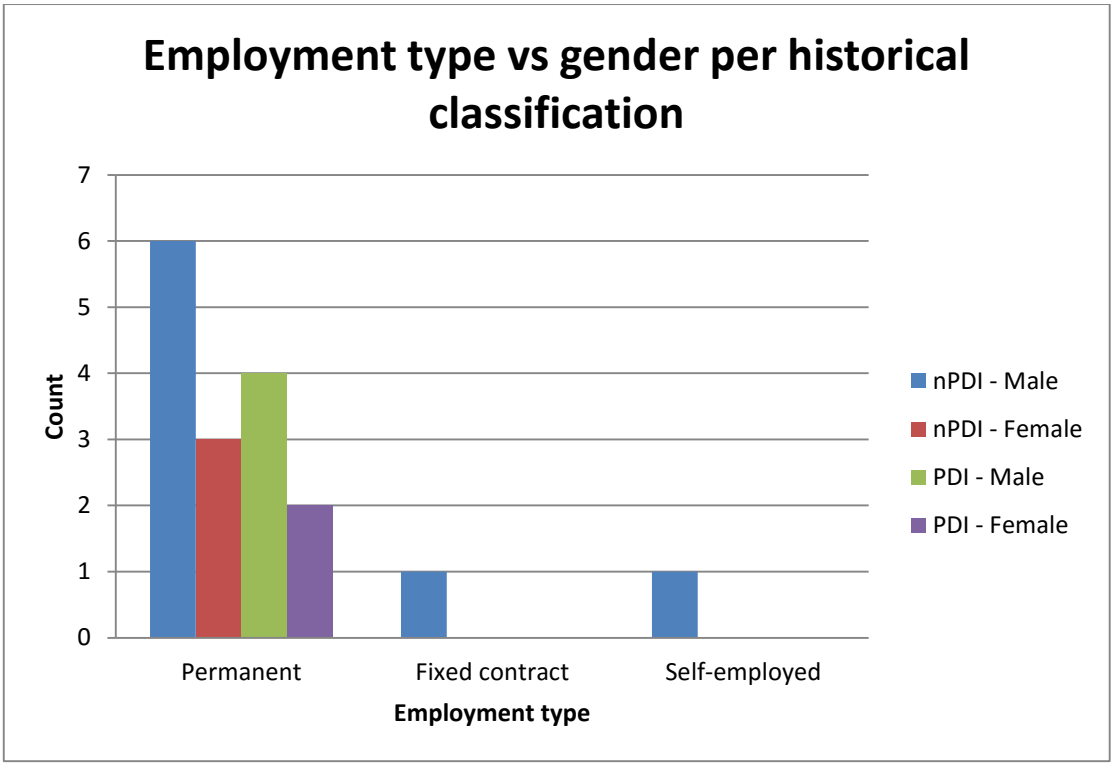

Figure 4.5: Employment type as per gender and historical classification

Table 4.3: Experience of respondents prior to studies

Category		Count	Percentage
Experience	Less than 1 year	5	29%
	1 to 2 years	1	6%
	3 to 4 years	2	12%
	5 to 6 years	0	0%
	More than 6 years	9	53%

(Source: author)

Figure 4.6 indicates the employment as per figure 4.5 and table 4.3 with additional indication of previous experience clustered as per historical classification. Of the six PDI respondents, 3 had less than 1 year experience and 3 had more than 6 years' experience prior to commencement of studies. With the nPDI grouping, 54,5% (count 6) had more than 6 years' experience prior to their studies with 2 having less than 1 year experience, 1 with 1 to 2 years' experience and 2 with 3 to 4 years' experience prior to commencement of studies.

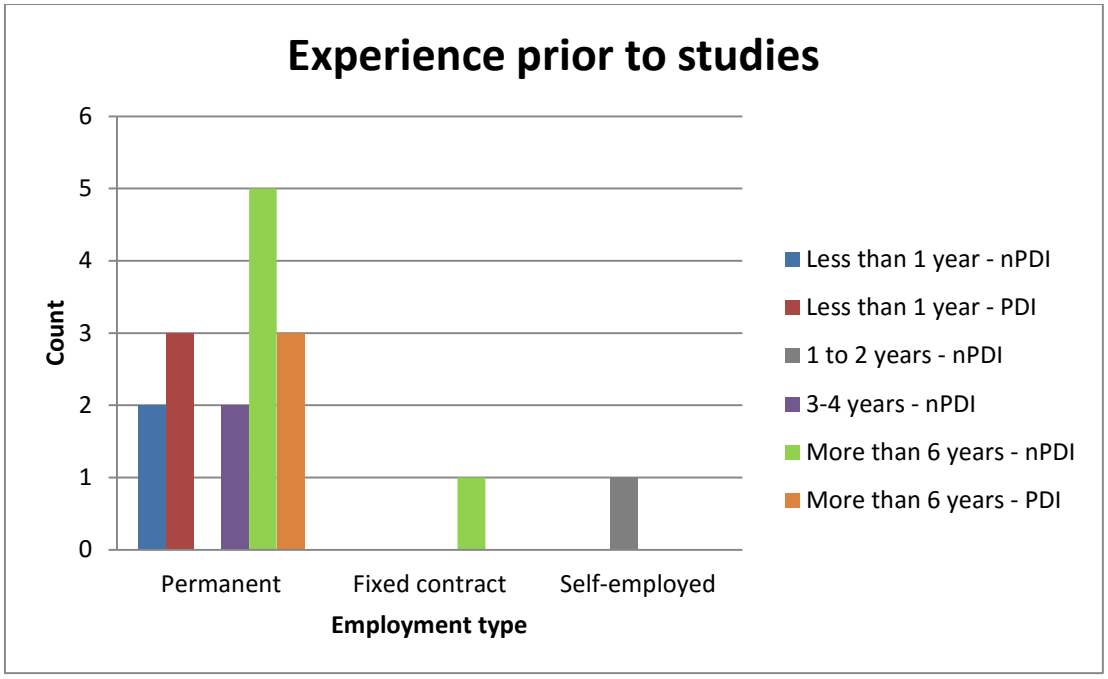

Figure 4.6: Experience prior to studies per employment type, gender and historical classification

Table 4.4 indicates the employment level that the respondents are currently working at, with reference to the difference in gender and racial classification. Job levels were classified as follows:

- High level: Management, Middle-management, supervisory
- Low level: Assistant, General worker

Overall, it is indicated that all females are currently employed in a job classified as high level, whereas 33,3% of males are employed at a low level job classification and 66,7% at high levels. With the historical classification, referring to males, 50% of the low level classified respondents were PDI with only 25% (count 2) of the PDI males classified as employed at a high level.

Table 4.4: Employment level classification

Category		Low level (coding 1-3)	High level (coding 4-5)
		Count	
Gender	**Male**	4	8
	Female	0	5
Gender per historical classification	**Male PDI**	2	2
	Female PDI	0	2
	Male nPDI	2	6
	Female nPDI	0	3

(Source: author)

Various distributions regarding employment and different racial and gender classifications were presented. It was furthermore important to assess in what type of institution the respondents were employed. Figure 4.7 indicates that the majority of the respondents (64,7%) work at private institutions with the rest as indicated on the chart. Interesting responses were from 2 respondents that indicated their institution as "other". Upon further analysis it was assessed that they were working at a co-operative, seemingly not classified by them as a private enterprise.

The last four questions of Section 1 of the questionnaire assessed the employment of respondents within the area they studied in. Aspects such as number of job, first or subsequent jobs, as well as reasons for leaving the specific area were requested. It is satisfying to indicate that 88,2% (count 15) of respondents are currently employed within the area of expertise they studied in, with only 2 respondents (11,8%) indicating that they are not employed in their area of training. Both indicated that their current jobs are not their first jobs, with one indicating that he/she has not previously worked in the industry as a result of not having obtained permanent employment. The other respondent was previously employed in his/her field of study, but had lost interest in the field and moved on to another industry.

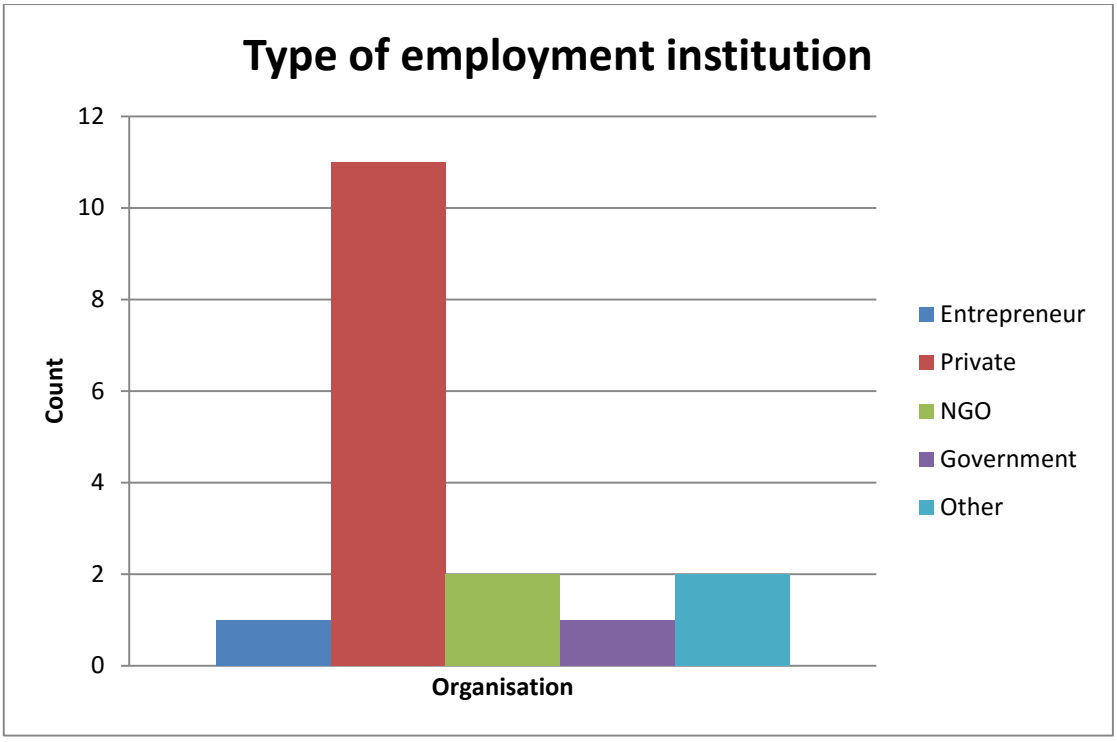

Figure 4.7: Type of institution where respondents are employed

4.5.1.2 Benefits of the programme

Section 2 of the graduate questionnaire consisted of three questions where respondents could indicate multiple answers to each question. The questions, with answer options as per the questionnaire are given as tables 4.5; 4.6; and 4.7, with questions depicted in tables 4.6 and 4.7 measuring training impact on level 2 and 3 of Kirkpatrick's four-level model as discussed in chapter 3. These levels are indicated as the area of learning and behaviour respectively.

Coding for the answers was done by assigning a sequence code to each answer option, as multiple answers were allowed. Therefore, depending on the answers indicated, a sequence of numbers would be assigned. For example, if a respondent chose answers 2, 4 and 5 as options, the sequence code would read 245. The following will present the answers using the specific questions with the coding.

With table 4.5 the major option indicated as reason to study at the EATI was option 1, indicating interest in agriculture. Option 1 was indicated as a sole reason in 10 of the 17 responses and a further 4 times in combination with other options. The second

highest response was options 3 and 6 with a 23,5% response rate at each option (count 4). This was taken overall ignoring the indicated combinations. It is interesting to note that option 6, which indicates the improvement of the economic situation, was indicated as a reason to study in only 23,5% of responses. The only other options indicated as a single reason was options 2 and 6 with 1 count each. Options 4 and 5 were not indicated as reasons in any of the responses.

Table 4.5: What was your initial motivation to study at the EATI?

Interested in Agriculture	**1**
Did not get admission to another institution	**2**
EATI was my only choice because of its good reputation	**3**
EATI was my only choice because of my school academic marks	**4**
Received a bursary	**5**
Opportunity to improve economic situation at home/ for myself	**6**
Other: Please indicate	**7**

(Source: author)

The major combinations indicated, with two responses each, were combinations 136 and 13. This follows the trend as indicated in the previous paragraph. The only response that does not conform to the rest of the responses is the combination of 267. Option 7 is indicated as “other” to which the respondent answered that he/she studied at the EATI as a result of a lower level qualification that was offered because of academic marks, and subsequent to not getting admission at another institution. This answer for option 7 can be assigned to either option 2 or 4 and subsequently kept as a single option for option 7 to avoid bias.

Table 4.6: What, in your opinion, were the most significant benefits to you from your studies at the EATI?

Increased skills and knowledge	**1**
Readiness for the job market	**2**
Gained industry contacts via programme interactions	**3**
Gained new passion/interest in agriculture	**4**
Other: Please indicate	**5**

(Source: author)

Table 4.6 assessed the opinion of graduates regarding the significant benefits that the training at the EATI has given them. Option 1, "increased skills and knowledge", was given as reason in 14 of the responses. For 4 of the responses it was given as the only benefit. The second most indicated response was that of option 2, which indicated "readiness for the job market" as reason. Option 2 was the only option other than 1, which was indicated as only response with a count of 1.

In all other responses the reasons were given as a combination. The combinations most frequently used, with counting in brackets are as follows: 1234 (2); 123 (1); 145 (1); 12 (3); 14 (1) and 15 (1). Option 3 was therefore indicated in 4 responses, option 4 in 4 responses and option 5 in 2 instances. Option 5 with the response stated as "other" was explained by the respondents as being a benefit because of "relevance to work" and as an "addition to current qualification".

It must be pointed out that two respondents did not indicate any response on the question depicted in table 4.6. One could interpret this as a neglect to complete or that these respondents did not think that there was any benefit. As there was no direct option to indicate "none" this could indeed be the case, even though this could be indicated at option 5 ("other").

Table 4.7: Which aspects of the programme at EATI were the most useful and valuable to you in your work?

Training manuals/ notes	**1**
Practical sessions	**2**
Class/ theory contact sessions	**3**
Technology transfer	**4**
Other: Please indicate	**5**

(Source: author)

With table 4.7 respondents were asked to indicate those aspects of the programme at the EATI that they deem most useful in their work environment. Again respondents indicated more than one aspect. The only options that were indicated as single reasons were options 1 (count 1), 2 (count 2), 3 (count 1) and option 5 (count 1). It would be expected that options 1 to 3 should be the obvious reasons, as they would be regarded

as the minimum that should be in place at an educational institution. Option 5 was indicated by the respondent to whom nothing was useful, as he/she is not in the industry as studied at the EATI.

Options given as combinations included individual options with counts as follows: option 1 (count 7), option 2 (count 11), option 3 (count 7) and option 4 (count 2). Combinations that were more frequent was 23 (count 5), 12 (count 4), 1234 (count 2) and 13 (count 1). Option 4 was indicated very poorly. With a practical-orientated institution it would be expected that technology transfer would be more prevalent as an institutional outcome.

4.5.1.3 Institutional evaluation

Section 3 of the graduate questionnaire specifically evaluated the respondents' perception of the EATI and the knowledge and skills gained during their study period there. The questions focussed on the value addition of the institution towards the graduates in their work environment. The questions therefore evaluates training impact on levels 1, 2 and 3 of Kirkpatrick's four-level model as discussed in chapter 3. These levels are indicated as the areas of reaction, learning and behaviour respectively.

Table 4.8: Institutional evaluation questions/statements

Question no.	Question/ Statement
1.	The skills and knowledge acquired at EATI are sufficient to find employment in my study field.
2.	Knowledge gained in the course is used in my current job.
3.	Skills obtained in my course are used in my current job.
4.	The skills and knowledge acquired at EATI are sufficient for further career opportunities (next-level promotion) in my current job.
5.	More training is needed for employment in my job area of study.
6.	I am satisfied that the EATI training is current and relevant.

(Source: author)

This section consisted of six statements or questions that assessed the indicated perceptions. The statements for question 1 to 6 are summarised in table 4.8. The statements made use of a 5-point Likert scale with the options as: 1= strongly disagree; 2= disagree; 3= uncertain/no opinion; 4= agree; 5= strongly agree.

Figure 4.8 represents the responses from the respondents as well as the count of each question. The responses are discussed per individual question indicated as bold headings in cursive.

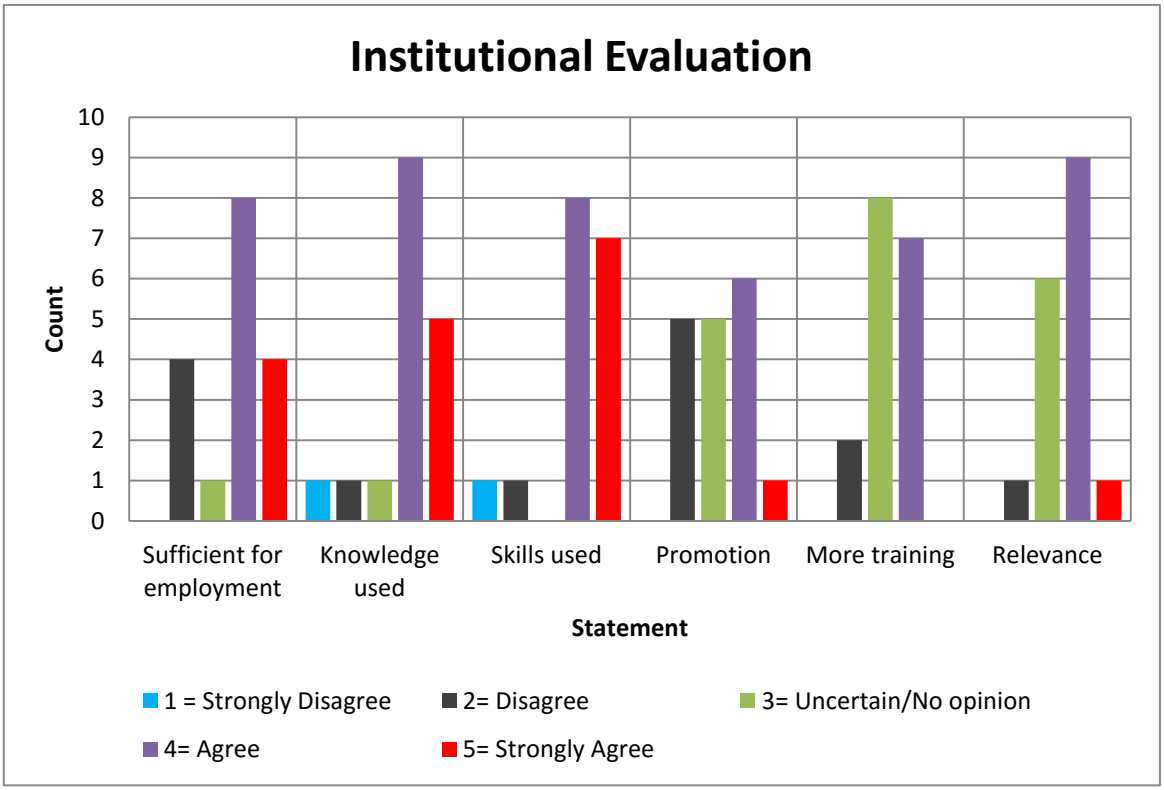

Figure 4.8: Institutional Evaluation

The skills and knowledge acquired at EATI are sufficient to find employment in my study field.

The majority of respondents indicated that the skills and knowledge gained at the EATI were sufficient to find employment in their field of study. This was divided into 47% of responses that indicated they agree and 23,5% indicating that they strongly agree. There was however 23,5% of respondents who did not agree with this statement and only 1 (5,9%) was uncertain or reserved opinion.

Knowledge gained in the course is used in my current job.

Respondents in general were of the opinion that the knowledge gained at the EATI contributed to their performance in their current jobs, with 52,9% who agreed with the statement and 29,4% strongly agreeing. Two respondents did not agree with the statement (5,9% disagree; 5,9% strongly disagree) and one (5,9%) was uncertain or reserved an opinion. The responses of disagreement could be contributed to the graduates that are not currently employed in their field of study.

Skills obtained in my course are used in my current job.

With the EATI that focusses on practical orientated training, the response regarding skills are not surprising, with the majority (88,2%) of responses agreeing that the skills obtained at the institution are used in their current jobs. This response are divided into 47% that agree and 41,2% that strongly agree. One respondent strongly disagreed and one disagreed, which again could be contributed to the graduates that are not currently employed in their field of study.

The skills and knowledge acquired at EATI are sufficient for further career opportunities (next-level promotion) in my current job.

Respondents were reasonably divided when indicating their opinion regarding the possibility of promotion with their qualification obtained at the EATI. With a total of 41,2% of responses indicating their agreement (5,9% strongly agree; 35,3% agree) and 29,4% disagreeing. Even more interesting is that 29,4% were also uncertain or reserved opinion. This could be because they are either in an environment with little possibility of promotion or that the qualification is outright just not sufficient for promotion. When adding the disagreement and no opinion responses it accounts for 58,8% of the total responses, which could indicate something significant.

More training is needed for employment in my job area of study.

This question was purposefully asked directly after the statement on promotion, to entice respondents to think further than the obvious as in question 1.

Interestingly, 41,2% of respondents were in agreement that more training was needed and 47% were uncertain or reserved opinion, with 11,8% of respondents disagreeing that more training is needed for employment. The agreement or uncertainty could imply that the respondents were of different opinion as in question 1 or that they did not understand the implication of the question. Also, the respondents could have implied that more training is needed seeing that their opportunities for promotion are limited as indicated in the previous question.

I am satisfied that the EATI training is current and relevant.

Question 6 asked the respondents' opinion on the relevance of the training; whether they think that the training is current with regard to industry focus. This question rendered a high non-response rate of 35,3%, where respondents were of no opinion or reserved opinion. The rest of the respondents agreed with the statement that training at the EATI is current and relevant (52,9% agree; 5,9% strongly agree). Only 5.9% (count 1) disagreed.

4.5.2 Qualitative data collection: Management questionnaire

The management questionnaire was conducted in the form of a structured interview. It was divided into two sections. The first section contained five statements on graduate employment, employing a Likert-scale for responses. These questions were similar to section 3 of the graduate questionnaire. The questions therefore also evaluates training impact on levels 1, 2 and 3 of Kirkpatrick's four-level model as discussed in chapter 3. These levels are indicated as the areas of reaction, learning and behaviour respectively.

The second part assessed the management team's opinion on Quality and QA at the EATI. The information from the management team was deemed important in order to make more significant deductions, if any, from data gathered from the graduates.

Responses to section 1 are presented by a graph and section 2 by a summary of responses to questions posed to participants during the interviews indicated as bold headings in cursive.

4.5.2.1 Graduate employment

This section of the structured interviews, section 1, requested the interviewees' opinion regarding the employment of the graduates from the EATI. The five questions posed were similar to the questions to the graduates on institutional programme satisfaction. The purpose of this was to have the opinion from the institution's side on the impact regarding knowledge and skills that graduates gained at the EATI as impact indicator. This was therefore a means of triangulation of the skills and knowledge gained (skilled persons) as indicated by the impact indicators of the EATI.

The five questions or statements on graduate employment have been summarised in table 4.9. A 5-point Likert-type scale was used for responses with the options indicated as follows: 1= strongly disagree; 2= disagree; 3= uncertain/no opinion; 4= agree; 5= strongly agree.

Table 4.9: Graduate employment questions/statements

Question no.	Question/ Statement
1.	The skills and knowledge acquired at the EATI are sufficient to find employment in most study fields.
2.	Skills and knowledge gained in the courses are current and relevant.
3.	Skills and knowledge gained are sufficient for further career opportunities (next-level promotion).
4.	Study programmes are generally developed in cooperation with inputs from industry role-players.
5.	I am satisfied that the EATI training is current and relevant.

(Source: author)

Figure 4.9 represents the responses from the interviewees and the count of each question on section 1. The responses are discussed per individual question.

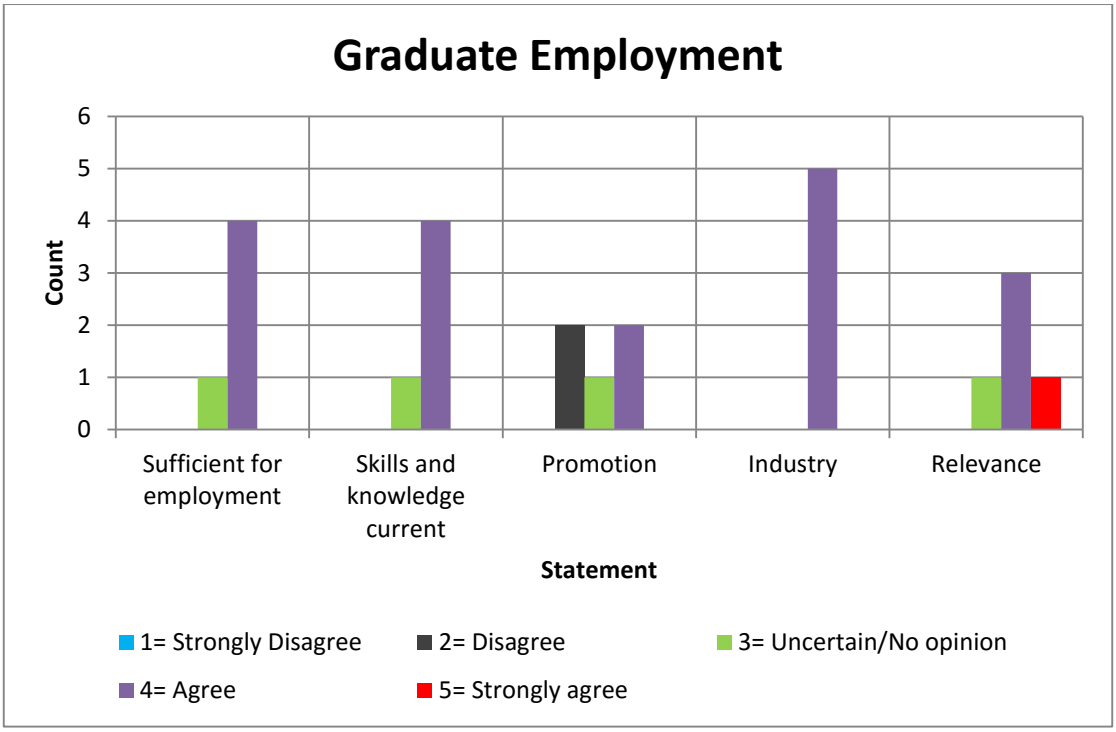

Figure 4.9: Graduate employment

The skills and knowledge acquired at the EATI are sufficient to find employment in most study fields

The majority of the participants (80%; count 4) agreed that the skills and knowledge that the EATI transfer to graduates were sufficient for graduates to find employment in their study fields. The remaining 20% (count 1) was uncertain as he/she was not sure whether that was the general occurrence in all study fields, other than his/her own. This person was however of the opinion that this was true for his/her specific study field, which could imply that all participants agreed that graduates were sufficiently equipped to find employment in their field of study.

Skills and knowledge gained in the courses are current and relevant

With the second question, as with the first, the majority of the participants (80%; count 4) agreed that the skills and knowledge gained at the EATI were current and relevant, compared to the focus within the various industries. Again, the remaining 20% (count 1) was uncertain as he/she was not sure whether that was the general occurrence in all study fields, other than his/her own. This person was however of the opinion that this was true for their specific study field, which could imply that all participants agreed that the skills and knowledge gained at the EATI were current and relevant.

Skills and knowledge gained are sufficient for further career opportunities (next-level promotion)

Question 3 extracted a mixed opinion from the management team with 40% agreeing with the statement and 40% disagreeing. The remaining 20% (count 1) did not have an opinion. Interestingly all of the participants expanded on their choice of answer with the response that they are not necessarily in contact with enough students to respond differently.

Study programmes are generally developed in cooperation with inputs from industry role-players

With question 4, it is satisfying that all participants indicated that programmes are generally developed in cooperation with industry role-players. With further enticement regarding the specific role-players, “industry” was indicated as the various recognised commodity bodies for example Potatoes South Africa, experts mainly from the Stellenbosch University’s Department of Agri-sciences were mentioned as well as individual commercial farmers.

I am satisfied that the EATI training is current and relevant

Question 5 was on the relevance of the EATI training, specifically with regard to graduate employment. The majority of the participants (80%) indicated that they agree with the statement (60% agree; 20% strongly agree) with only 20% (count 1) not having

an opinion. This was the response, contradicting the previous question where all participants agreed that industry role-players are consulted with programme development. The participant however justified the answer with the explanation that different study fields are externally assessed on a 3-year cycle, which means that there could be modules/programmes that are not as current and relevant as they should be.

4.5.2.2 Quality and Quality Assurance (QA)

Section 2 of the management questionnaire was utilised to potentially give a better understanding of information gathered as per the graduate and management questionnaires regarding research objective 2 and also to interpret findings, together with the impact question data, to satisfy objective 3. Therefore, section 2 of the management questionnaire attempted to give insights into the perception that graduates have regarding the quality of the training programmes, by means of assessing the management team's perception on quality and QA at the EATI.

Quality and quality assurance, specifically the importance of M&E within institutions of HE as a function of quality education was discussed extensively in Chapters 2 and 3. Also discussed was the importance of having a framework that should be used as baseline for important M&E functions. Subsequently a Logic model was proposed as per section 4.4.1 and specifically figure 4.3.in the context of HE for the EATI.

The structured interviews, aimed at the management team of the EATI, were therefore conducted to assess the institutional perception on its QA processes. Five interviews were conducted in 30 minute sessions each, and the responses given by participants were noted as well as recorded electronically as a back-up for referencing. Answers to all questions are summarised per question below as per section 2 of the management questionnaire. Questions posed to interviewees during the interviews are indicated as bold headings in cursive.

What is your general understanding of the term quality within the Higher Education (HE) environment?

The five participants basically referred to the same idea on quality as "quality education" or "quality teaching" to students. The expansions on this definition however, were quite different. This was expected as it was discussed in chapter 2 on the definition of quality and QA.

Aspects of quality were mentioned, such as quality assessments (tests and exams), specifically in the context of teaching standards. Standards regarding NQF levels, that indicate minimum standards regarding content and assessment, were a general answer. One participant indicated that standards of training include fulfilling the minimum level required (by legislation) to maintain reasonable standards on the particular quality level. One participant indicated that "you can get away with bad lecturing, but the tests should be of good quality".

Teaching standards, as a function of the standards that lecturers uphold, were also indicated. The work ethic of lecturing staff was regarded as very important, as lecturers have the responsibility to mould students to the industry-based outcomes as indicated by the EATI. Potential employers expect graduates with the minimum knowledge to function effectively.

Another aspect that was mentioned by one of the participants was the importance of resources to ensure that quality education can be delivered. Resources would include facilities, human resources as well as teaching techniques. The participant, however also made it clear that good resources do not necessarily mean good quality.

What is your understanding of the term Quality assurance (QA) within the HE environment?

The general theme of responses was within the realm of the definition given by one of the participants as "a mechanism to test or measure whether quality is above or under the prescribed standards". The idea of ensuring that the training complies with the minimum requirements of the NQF level was regarded as confirmation that requirements are adhered to.

A theme discussed by at least three of the participants was the idea of internal and external institutional and programme evaluations. Internal evaluations were regarded as self-assessments as per the HEQC and the availability and adherence to Standard Operating Procedures (SOP's) by means of monitoring.

External evaluations were indicated as the on-site evaluations by the HEQC as per legislation. Another external source of evaluation was feedback from industry, albeit formal or informal. This is important for benchmarking to assess whether training programmes are relevant to what potential employers expect from graduates and to assess what other academic institutions are offering.

Are the terms of Quality and Quality assurance, as you defined, applicable to the EATI? If no, please explain.

Three participants answered an emphatic yes with one answering yes and no. One participant was not sure of what was defined is applicable to the EATI.

The "yes" answers were expanded on in two instances. The participants indicated that mechanisms for QA are not 100% in place and that the institutional evaluation was done at least three years ago by the CHE, and was therefore outdated. QA mechanisms are needed to ensure that corrections are made if and when needed. SOP's were indicated as not specific enough and evaluation does not quantify the outcomes and therefore cannot be measured.

The participant that answered "yes and no" explained that he/she tends more towards the "yes" answer, but cannot be sure. It was indicated that the faculty head must ensure that monitoring in classrooms take place and that new lecturers undergo introductory training, for example the PREDAC course at the University of Stellenbosch.

The participant that answered "unsure" explained that there are shortcomings with regard to the mentorship programme of new lecturers and that a person does not know what happens in other classes.

The following questions are related to the Logic model derived from the vision and mission of the EATI (2013), as well as the stated outputs and outcomes related to Provincial and National Strategic Objectives and Outcomes:

Does the EATI have a (QA) system that tracks progress with regard to the stated outcomes and impacts of the programme? If no, please explain how outcomes and impacts are measured.

With the answering of this question the participants were divided. Two were sure that the EATI had a system in place, even though not necessarily named as such. One participant indicated an emphatic "no" and the other were by definition not sure. The fifth participant could not answer yes or no, but offered a lengthy explanation none-the-less.

The measurement of outputs was extensively explained, as the EATI, as a programme within the Western Cape Department of Agriculture, needs to report on outputs through the various reporting cycles and structures within government. A certain key person within the EATI has the responsibility of ensuring that targets are met as part of the service delivery mandate. One participant noted that students need to be ready for work the first day of employment, and therefore quality standards should be met. External and internal evaluations are done, specific to modules and study fields, which potentially can indicate shortfalls that need to be addressed.

None of the participants specifically indicated how outcomes are measured, but one indicated that he/she is not sure that quarterly reviews represent what is stated as outcomes, as outputs does not give an indication of outcomes.

Only one participant indicated that impact is measured, as an external service provider is in the process of conducting a survey of all students. None of the other participants mentioned such a study, which is alarming, as they are all part of the management team of the EATI. One participant indicated that impact is not measured and the only indication of impact is through the media when alumni are doing well. Also, the graduate demand from potential employers, which at this stage is quite positive, is the only other indication of impact and outcomes being met.

One participant indicated that he/she is not sure that there is a system. All staff is supposedly working "blind" as nobody knows what the other is doing. Furthermore, there is nobody that is looking either from the inside or from the outside regarding QA. What would be important is the initiation of lecturer support projects to improve student evaluation.

Does the EATI have a QA system (M&E) that tracks and measures ongoing progress regarding programme implementation and possible remedial action should challenges/discrepancies be identified?

Only one participant indicated that the EATI has a M&E system in place, although he/she admitted that it is not as active as it should be. Interaction with industry and AgriSeta was indicated as a means of M&E. Furthermore, a post has been funded for an M&E manager to coordinate this specific function.

The one positive response was in contrast to the rest of the participants. The response that could possibly be indicated as positive was the one that indicated that there used to be a process or system, but he/she is not sure whether it is still in place. There used to be progress assessments of first-year tests after completion of the 1st test series, but it do not seem to take place anymore. This function is basically taken over by the faculty managers within their own faculty, which implies that it is not an institutional process.

The rest of the participants (count 3) indicated that no formal M&E system is in place and that responsibility is with the faculty manager to stay in contact with the industry to make sure that modules and content are still relevant.

If the answer in 5.1 (previous question) is no, do you think such a system should be in place? Briefly explain.

With only three participants indicating their answers in the previous question as "no", these were the only responses to this question. All the mentioned participants indicated that there definitely should be an M&E system in place.

Reasons given are that any programme should have an M&E function, as "to measure is to know". Staff turnover was flagged as a serious reason why an M&E system is needed. Continuity is difficult and therefore QA is difficult to control, because consultants used are inexperienced and the entire process are therefore equalling "crisis management".

If the answer in 5.1 is yes, do you think the system is effective? Briefly explain.

Two participants indicated on M&E (5.1) that there was an M&E system in place and therefore responded to this question. The first participant indicated that the current system's effectiveness and efficiency can improve and that the EATI are busy with the process to that effect.

The second participant indicated that information was gained by various means, but remedial action, based on semester results, was not effective.

What is your opinion regarding the stated outputs, outcomes and impacts of the EATI? Should it stay as it is, be revised or changed entirely? Please explain your answer.

The final question of the structured interview list had rather positive feedback with only one of the participants indicating that the outcomes, outputs and impacts, as indicated with the Logic model (figure 4.2), should be revised.

The revision should be a continuous process as times are changing fast, specifically on the political front. Traditionally the EATI graduates are sought after, but industry demands are changing and outputs and outcomes should be revised accordingly. The 3-year cycle of programme/module evaluation was indicated as being too long and should in actual fact be evaluated continuously. The participant indicated that the traditional definition of industry has also changed, from commercial farmers only to and including up-and-coming farmers and other land reform projects.

Two of the participants indicated with a straight forward answer that the stated outputs, outcomes and impacts should stay the same, but should be properly implemented and managed. One indicated that revision could be an option, but change definitely not entirely. Regarding the outputs, students are of good quality as deducted from the amount of applications every year, which could imply that training at the EATI is in demand. With the outcomes there are room for improvement and the participant felt that the model should also include development of lecturing staff. No further comment regarding the impact was offered.

One of the participants indicated that all stated outcomes should stay as it is, as all the aspects are achieved and active. There is however room for improvement. The challenge is mainly managing a training institution within government structures, as the lack of autonomy complicates governance and operations. According to the participant, feedback from industry regarding students and their performances is generally positive, as graduates perform well in this very competitive environment. The work environment changes constantly with regard to technology and thus the skills demand, but the feedback from industry is sufficient to satisfy the aspects of outcomes and impacts as indicated. This participant also referred to a survey that is in process to get formal feedback from employers of EATI graduates.

The final participant indicated that there should be additions to the outcomes to include the number of graduates gaining employment. An alumni system should be put in place to get feedback of where students are working a few months after graduation. At outcomes the participant indicated that the statement: “we should produce employable graduates”, be added to the outcomes statements. This participant also indicated that the development of lecturers should be included in a QA system in order to give lecturing staff more opportunities for skills development.

4.6 DISCUSSION

The aim of the study was to evaluate the impact that the EATI higher education programmes has made on graduates from 2009 to 2013. The indicator for impact, as per the EATI, is the delivery of skilled persons (graduates) to contribute to economic development. Three research objectives were subsequently indicated to satisfy the

general aim of the study. As impact evaluation, and specifically training impact evaluation, has different aspects, the three objectives were formulated as follows:

- Objective 1: Impact assessment of HE programmes regarding employment of PDI and non-PDI graduates.
- Objective 2: Perception of graduates on quality of the programmes as well as the perception of the management team of the EATI.
- Objective 3: Design or propose M&E tool to monitor outcomes and potentially lead to significant impact evaluations.

The reason for conducting the study was mainly to assess the current status of student employment, as there is no other study to use as baseline for further research. Findings obtained could then be used to suggest the way forward with regard to QA and M&E, which could assist with the general governance of the institution. Objective 1 and 2 were therefore addressed by this chapter, with objective 3 addressed as part of recommendations stemming from the findings of the study.

The quantitative and qualitative approaches utilised in this study aimed to answer the research question and objectives of this study in different ways. The method employed aimed to evaluate objectives 1 and 2 by means of triangulation as defined in chapter 3.

The quantitative and qualitative approaches will therefore be discussed within the concept of triangulation within an ex-post impact evaluation approach, specifically within the training impact evaluation (TIE) model of Kirkpatrick as discussed in chapter 3 (table 3.5).

4.6.1 Quantitative approach

The graduate questionnaire contained different questions that evaluated impact and training impact in general. Section 1 of the questionnaire evaluated employment of the graduates and sections 2 and 3 mostly training impact. The employment of graduates can however be included into the “results” section of level 4 of the four-level model.

Table 4.10 indicates the specific questions as well as the connection to the four-level TIE model as per table 3.5.

A discussion of findings will henceforth follow, taking in consideration of answering the research objectives.

With objective 1, specifically regarding the perception that PDI and nPDI graduates are employed differently within the agricultural industry, the findings obtained from the quantitative data collection approach indicated that there is no difference of employment of PDIs and nPDIs. The number of graduates from the different groupings differs, but that is due to factors outside the scope of this study.

Additionally, all respondents, except two, are employed within agriculture, and all the graduates are employed within a wide range of job levels. In fact, all female respondents, irrespective of historical classification, are employed in higher level positions. It is important to note that with the 17 respondents, their previous work experience within agriculture ranges from less than one year to more than six years. This could imply that the training intervention, rather than their experience has contributed to their employment. It must however be stated that with the low response rate, caution should be taken in generalising these findings.

Table 4.10: The four-level TIE approach of Kirkpatrick including graduate questionnaire

Level	**Issue**	**Question answered/what is assessed?**	**Graduate questionnaire questions**
1	Reaction	How well did they like the course?	Section 3: Q 6

		Immediate effects of participants on feelings toward the training	
2	Learning	How much did they learn? Principles, facts, techniques absorbed by trainees	Section 2: Q 2.2 Section 3: Q 1-5
3	Behaviour	How well did they apply it at work? Job behaviour changes	Section 2: Q 2.3
4	Results	What return did the training investment yield? Training impact: cost reduction and reduced absenteeism	Section 1

(Source: Author)

Overall, the respondents are satisfied with the performance of the EATI on the transfer of sufficient skills and knowledge for employment. Did the knowledge and skills add value to the lives of graduates regarding work opportunities within the agricultural sector? This question was addressed, but a clear indication on the actual value was not given by respondents. The reason for this statement, is that respondents only indicated in 23,5% of the responses that the improvement of the economic situation had an influence on the graduate's initial choice of the EATI as an institution. Does this also imply that they are of the opinion that studying at the EATI does not afford them the opportunity for economic improvement? This should be investigated with further research studies.

Furthermore, the possibility of promotion within their respective fields was indicated as concerning, as 29,4% of respondents did not agree that they have enough skills and knowledge for further promotion within their jobs, with 29,4% was unsure or reserved opinion. It was previously also indicated, that the 29,4% non-response is significant regarding the low response rate of the study in general. This links to the previous statement of the possibility of improved economic situations for themselves and/or their families.

With objective 2, the analysing or deduction of the quality of the training programmes is not easy. This is mainly due to the fact that the question was not directly posed to the graduates. The only reference to the quality of the institution is that programmes, and knowledge and skills gained, are sufficient to find employment within the agricultural sector.

4.6.2 Qualitative approach

Management team members, as the implementers of the programme, were interviewed as a means of gaining further insight into the responses from the graduates. With the questionnaire based on the insider or self-evaluation principle of performance measurement, the overall response from the management team members was that the skills and knowledge offered or transferred to the students were sufficient to find employment in the industry.

A concern raised was that the management team was unsure of the promotion possibilities of graduates. Reasons afforded were the lack of contact post-graduation, which implies that they are not entirely sure where the students are employed and in which capacity. There also was a sense of uncertainty regarding the overall employment and promotion in all areas of study.

The management team was inconsistent regarding the QA and M&E systems at the EATI. Certain members indicated that systems are active, while others indicated that there are none. There were also members who indicated that there were systems in place previously, although not formalised, but now inactive.

Additionally, members of the EATI management team indicated that the lack of a skills development plan for academic staff needs to be addressed. This could imply that the QA system is not effective and therefore non-existent as alleged by certain members. This aligns with the indication that faculties are unaware what the others are doing regarding QA, teaching as well as tracking of graduates.

The findings, specifically from question 6 of the management questionnaire, indicate that the overall implementation of the programme is satisfactory, but the monitoring of the outcomes and impacts are lacking. The question asked the opinion of participants on the outputs, outcomes and impacts of the programme. This can be deducted from the statements made by four of the 5 participants that the current outcomes and impacts of the EATI should remain unchanged. These members however also indicated that a system of M&E should be formalised to keep abreast with the changing agricultural landscape, specifically the profile of farmers and changing needs of the industry.

The next section will discuss the common findings from the quantitative and qualitative data collection approaches. This is the section where triangulation of findings should be done.

4.6.3 Common findings: qualitative and quantitative data

The areas within the management and graduate questionnaires that were similar were done specifically to triangulate both grouping's perception on the sufficiency of the skills and knowledge that graduates gain at the EATI. This is important within a training impact evaluation, as part of the learning aspect.

The qualitative approach findings therefore support the findings obtained from the quantitative data collection. The overall feeling from graduates (77%; average of 71% skills and 82% knowledge) as well as the management team (80%) of the EATI is that the skills and knowledge gained at the EATI are sufficient to find employment in any study field. This satisfies research objective 1, which evaluated employment of graduates as well as objective 2, which evaluated the quality of the programmes.

With research objective 2 regarding quality of the programmes, knowledge and skills obtained can be contributed to quality education, together with national goals for education (UNICEF, 2000:3). With the EATI, the goal of the institution is producing graduates that contribute to economic development. It can therefore be concluded that participants and graduates are of the perception that the EATI are presenting quality training programmes. The goals of agriculture and agricultural training are however more complex and caution should be taken to make the statement of quality education,

specifically in a sector where the agricultural training institutes are not specifically guided by legislation. The reason for this caution is that quality education in agriculture should go beyond producing graduates that are employed, but should produce graduates that can alleviate poverty within society.

Additionally, another concern raised by both groups was that promotion within certain study fields is not possible. The graduates were divided with their opinions, but the management team unsure. The uncertainty was justified with responses on the lack of contact or traceability of graduates and the lack of cohesion and sharing of information within the EATI governance structure.

4.7 CHAPTER SUMMARY

In this chapter the data obtained from sampled graduates as well as from the management team of the EATI was presented. This was done utilising graphs, tables and discussions of the questionnaires employed.

Graduate questionnaires were divided into demographic information with a section on institutional satisfaction that included institutional evaluation and benefits. The questionnaire was mainly designed to satisfy the research objectives as well as to incorporate important aspects as derived from chapters 2 and 3, where literature cited was discussed. Importantly, certain questions were combined to make more sense of the data obtained and to gain more insight with regard to the research questions as indicated in chapter 1.

Management completed questionnaires by means of structured interviews. With the interviews an insider view on the institution was created and an understanding of the data gathered from the graduates was gained. The management team's inputs would also be employed to suggest an M&E tool to address challenges identified during this research project.

The following chapter will discuss salient points, challenges or deviations in data as well as make recommendations where appropriate.

CHAPTER 5:
CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The aim of this study was to evaluate the training impact of the EATI higher education programme in realising its programme goals. The specific programme goals are to produce graduates that can contribute to economic development in their communities and in broader society. The reason for the impact evaluation was therefore to gain

baseline information on student employment and to use the data towards developing an M&E tool if needed.

Consequently, three research objectives were formulated. The first objective of the study was to assess the training impact that the HE programme of the EATI made towards the employment of the graduates. Part of the first objective was to determine whether there is a difference in the employment of graduates based on historical classification post-apartheid. This classification was defined as PDI and non-PDI (nPDI).

The second research objective was to assess the graduate and management perception on the quality of training programmes. The third objective of the study was subsequently to propose an M&E tool that would be appropriate to address the challenges deducted from the research.

The study was conducted utilising various themes that would add value to the research aims and objectives. Chapter 2 gave an in-depth overview of HE and its challenges, whereas chapter 3 reviewed M&E and the importance of impact evaluations within a system of QA. The data collection methods were based on literature cited and challenges identified.

The previous chapter, chapter 4, presented data that was gathered as a result of the literature reviewed. The data was clustered to address the study objectives, discussed accordingly and was presented utilising graphs and tables.

This chapter will henceforth discuss salient points that were identified from the previous chapters and make recommendations if justified. The recommendations will subsequently be used in proposing an M&E tool to help address challenges highlighted by the study. As a method of triangulation was employed, the graduate feedback as well as the feedback from the management team will be discussed in order to draw conclusions, as described in figure 4.1.

5.2 GENERAL CONCLUSIONS

5.2.1 Theoretical framework for agriculture in HE

An important aspect that was identified in the literature consulted was that the definition of QA should be made clear and accepted by all staff members. As an institution formulates its own mission and vision, the definition of QA should be known by all, as this could have an implication on the implementation of the stated outputs, outcomes and impacts.

It was concluded that most countries are reverting to QA within their HE systems by means of a more accountable and accreditation-minded approach to HE. Within South Africa this is no exception, and it was stated that continuous improvement should be the main aim of QA.

Agricultural higher education and training, which is in the best position to address poverty alleviation, is not effectively organised with regard to QA. This has the implication that there is no guiding baseline, which hampers the progress towards addressing the challenges within the sector. The biggest challenge at this stage is the lack of legislation guiding ATIs.

A challenge that was specifically indicated was the difficulty of gaining access to the agricultural sector. It is therefore important that agricultural graduates are employable, which demand that they should be equipped with the appropriate skills and knowledge required from the industry they would seek employment from.

5.2.2 M&E: impact evaluation

The most important goal of government interventions is the benefit to the broader community it serves as well as the assurance that taxpayers' money is well spent. As a result, the EATI, which is a government entity, should have a system in place that would ensure that outcomes are validated. Impact evaluation is regarded as a process in which outcomes are validated and made believable to the broader community.

An important aspect of the QA process, of which M&E is an integral part, is the planning process prior to implementation of the intervention. IE is a process conducted mostly at the end of an intervention, or even mid-way. It is basically done to examine which part of an intervention worked, or otherwise and why. It is also conducted to ensure that goals are reached, in other words, whether the intervention changed people's lives.

Perrin (2012: 2) made an important statement indicating that "meaningful impact evaluation is not possible without significant support from an organization's regular M&E activities". This implies that IE is not meaningful when a system of M&E (QA) is not in place. The research study was subsequently conducted to assess the current state of QA and therefore M&E at the EATI.

5.2.3 Quantitative research component: Graduate employment and institutional satisfaction

Based on the literature consulted and the empirical findings reported, various conclusions can be drawn pertaining to the research aim and objectives. The graduate questionnaire was divided into three sections. Two of the sections specifically targeted the graduates' demographics, including their current employment status as well as their perception on the benefits that the EATI contributed towards their employment. The third section specifically targeted their opinion on institutional perception. The section on institutional perception was similar to the section on graduate employment as posed to the management team.

It is important to keep in mind that the goal of the study was to use the findings as baseline for future development of QA and M&E systems at the EATI. The assessment of impact was therefore investigated as research objective one, with the deciding factor of graduate employment within their field of study at the EATI.

Prior to summarising the research findings, it needs to be reiterated that the study only had a response rate of 16%, which consists of 17 respondents from a possible sample of 105. This significantly influences generalisation of findings. Conclusions on findings

are therefore limited to the low response rate and should not be generalised for the entire graduate population for the study period.

5.2.3.1 Graduate employment

Objective one of the study concluded that 88,2% of the 17 respondents that graduated from 2009 to 2013 were employed within their field of study and 15 of these occupied permanent positions. There is also no difference between the employment of PDIs and nPDIs. The findings based on previous experience, which could potentially have an influence on employment of graduates, ranged from less than one year to more than six years, which could imply that previous experience had little influence on the respondents' employment.

The researcher thought it important to also investigate the employment level of the graduates, as this would also give an indication of the employment type and possibilities for other graduates towards progression in their careers. Findings indicate that all of the 17 responding graduates are employed in low to high level jobs, with the majority employed in the higher level end of the spectrum. It is interesting to note that the responding female graduates, irrespective of historical definition, are employed in jobs classified in the high level spectrum. This could be an indication that there is an effort made in the agricultural sector to change the general perception of agriculture as a male dominated career.

A finding worth mentioning is the fact that only one graduate out of the 17 respondents is self-employed, thus classified as an entrepreneur. Entrepreneurship, within the current South African economic status, should be seen as an important gateway to expand on job creation. The EATI has as its impact statement the following: "skilled persons contributing to economic development of their communities, specifically rural and peri-urban areas." The researcher is of the opinion that development of entrepreneurship addresses the impact statement and should be further expanded within the HE programmes of the EATI.

In conclusion on graduate employment, it can be viewed that the 17 responding graduates from the EATI are generally employed in the sector, with little exception

regarding historical classification and/or gender. The differences in employment level could potentially be assigned to the different qualifications that the EATI offer, but this cannot be confirmed as this was not the aim of this study.

5.2.3.2 Benefits of the programme

Graduates were given the opportunity to raise their opinion regarding the benefits that the EATI has afforded them during their time of study. I have already indicated that the experience that graduates had prior to their studies at the EATI varied across the indicated spectrum. Hence, their prior experience should not have influenced their opinion regarding benefits of the programme. The questions on programme benefits contained information on motivation to study, significant benefits from the programmes as well as useful aspects within the work environment.

The major choice given by the respondents as motivation for studying at the EATI was the graduates' interest in agriculture. The second most used motivations were the good reputation of the EATI as well as the prospect of an improved economic situation. It is rather interesting that the choice of "improvement of economic situation" was the second most indicated as motivation to study at the EATI. The researcher, prior to this study, within the scope of agricultural education and training, were of the opinion that this would have been the major reason for studying at the EATI.

Also interesting and maybe alarming, is that one of the outcomes of the EATI is the number of bursaries awarded to students, but that this has no impact on any of the 17 responding graduates. This could imply that not enough bursaries are awarded or that the student population of the EATI is not in need of financial assistance. It could however also imply that the respondents do not perceive the award of a bursary as a benefit, but rather as a necessity to study.

The two other questions on programme benefits were answered as expected, as the major answers were according to the outcomes as implied or indicated by the EATI. However, the researcher is of the opinion that the choice of "technology transfer" listed in the question on useful aspects, should be given more emphasis by the EATI. The main reason for this statement is the mere fact that the EATI indicates in one of its

outcome statements that training is led by contemporary research. If this was indeed the case students would possibly be more inclined to see or experience the transfer of technology. Insights from the management team could possibly give more clarity on this aspect.

5.2.3.3 Institutional evaluation

It was mentioned earlier that this section of the graduate questionnaire was similar to the first section of the management questionnaire on student employment. The comparison of answers will be given further on in this chapter. The use of the institutional evaluation is two-fold. Firstly, to add to the institutional performance regarding its outputs, outcomes and impacts, and secondly, to use the findings or feedback in proposing an M&E tool for the EATI.

Generally, the respondents agreed that the skills and knowledge gained at the EATI were sufficient to find employment in their study fields, useful in their current jobs and that the training at the EATI was current and relevant. When confronted with the issue of promotion and whether more training was needed, respondents were unsure. The researcher is of the opinion that this sudden uncertainty could be the result of the current employment of respondents, which could have limited career advancement opportunities.

Graduates from the EATI are generally more practically trained or oriented than their university counterparts, which means that they can potentially do more on their first day on the job. This, however, could imply that they need more management and theoretical knowledge to be employed in more strategic positions. The need for more training would therefore be a realistic response as in this study.

5.2.3.4 General conclusions based on student perspectives

Reviewing the findings of the entire graduate questionnaire, it could be summarised that the 17 responding graduates are generally satisfied with the knowledge and skills gained at the EATI as well as with the performance of the institution. There are,

however, aspects that need more attention, but it is mainly an institutional governance issue.

The EATI therefore satisfies the basic needs of students, but the question remains, whether it delivers on the outcomes and impacts that it states in its mission and vision, as well as on the statement enclosed in the Logic model.

The main issue that needs to be addressed is the measurement and further refinement of its impact statement, as respondents do not perceive the opportunity to improve their economic situation as a motivation to study. If this is the desired impact that the EATI are working towards, there is a discourse to what the students and broader community want or perceive to gain from the programme. The indication is that focussing on entrepreneurship could be a possible step towards defining its impact statement.

Technology transfer seems to be another aspect that needs some attention, specifically as it is also part of the outcomes statements. The need for further training is evident, which could imply that the programme offerings should be reviewed to include studies beyond the current "first-level" qualifications. This could potentially address the concern that respondents have regarding career advancement.

5.2.4 Qualitative research component: Management perspective

The qualitative component of this study was mainly conducted to give more insight into the findings from the graduate perspectives. The idea is to triangulate the findings to come to a more reliable conclusion.

The first section of the management questionnaire consisted of questions that required the participants' perception of graduate employment. As previously mentioned, these questions were similar to those in section 3 of the graduate questionnaire on institutional evaluation. The responses from both the management team and the graduates will be compared to make a qualitative conclusion based on the findings.

The second section of the management questionnaire was based on quality and QA as per literature consulted in chapters 2 and 3. These responses were used to formulate the

basis for the recommended M&E tool, based on findings from the graduate perspectives as well as inputs from the management team.

5.2.4.1 Graduate employment

The majority of the management (80%) team indicated that they are of the opinion that the skills and knowledge gained at the EATI are sufficient for graduates to find employment in the sector and are current and relevant to what industry requires. Programmes are generally developed in cooperation with industry role players and this would confirm the employment of graduates. The respondents generally concurred with the management team's perception.

The concern is that faculty managers were unsure that their counterparts in the other study fields experience the same positive feedback and cooperation from stakeholders in their study fields. Although findings suggest that all faculties generally receive the same positive feedback from industry stakeholders, the concern is that the management team is unaware of what their colleagues are experiencing. Furthermore, findings on the relevance and currency of training had a somewhat contradictory response from the management team. The assessment cycle of modules seem to be out of sync, which could imply that modules or content may not be as current and relevant as initially indicated.

Opportunity for promotion, as with the graduate respondents, was met with mixed responses. The management team indicated that they are not necessarily in contact with enough students to give an objective answer, hence the uncertainty. In the researcher's experience at the EATI, a system of graduate traceability does not exist, therefore the lack of contact with graduates. A system of student feedback is also non-existent, which implies that students do not have a platform where they can raise their concerns after graduation.

5.2.4.2 Quality and QA

Findings during the interview stage of the study confirmed various aspects encountered with the literature consulted. Firstly, that there is no specific definition and

understanding of definitions for quality and QA. Secondly, that QA should be an institutionalised system in order to ensure success. M&E should therefore be an integral part of the governance of an academic institution, as the mission and vision of institutions are inherently different. This implies that there is no fit-for-all system and should be developed within the institution.

In general, the findings acquired from the management team indicate that there is a definite need for a formalised QA system that is implemented, managed and evaluated on an ongoing basis (M&E). The reasoning behind this statement is that certain members of the team indicated that a QA system is in place and active, as well as M&E, although not as active as it should be. On the other hand, other members indicated that no formal systems exist, although there were hints of such a system in place many years ago.

The concern is two-fold. Firstly, with such a small management team, there are discrepancies with regard to the existence of a QA system and the lack and need of M&E. This in itself is a concern regarding the governance of the EATI, as it seems that there is a culture of compliance. Secondly, that a basic logic model is not in place, which implies that planning, is done "blind" as one participant indicated. This gives merit to statements made by more than one participant that they are not aware of what is happening in other faculties, and it seems also true for the general governance of the EATI.

The researcher at this stage recognises that all participants were eager to work towards developing and implementing a formalised QA and M&E system. This is a step that is needed, as QA should be an institutionalised process accepted by all concerned and executed as a means of continuous improvement. With this fact in mind, participants made comments towards expansion and revision of the Logic model as compiled by the researcher.

An important aspect that should be noted is the need for a skills development plan for academic staff members. Technology transfer and research are part of the outcomes and impacts, but staff members felt that a plan for professional development is lacking.

Although staff members are encouraged to improve their qualifications it is not part of the formal QA system.

5.3 RECOMMENDATIONS

The most important findings that need attention and therefore should be incorporated into recommendations are the following:

- Graduate respondents had a concern regarding promotion and career advancement, which the management team concurred with. This could imply that the programme offerings should be reviewed.
- The outcome and impact statements of the EATI should be defined better and also expanded, specifically the area on bursaries and impact on economic development.
- A Quality Assurance, and subsequently an M&E system, should be developed, formalised and implemented.
- A definition and meaning of quality and QA should be formally adopted by the EATI, in order for all staff members to be informed on the context of the QA system that need to be developed.
- A system should be put in place to keep track of graduates.
- A system that serves as a platform where students can raise their concerns should be put in place.
- Ongoing cooperation with the industry should be established formally, to ensure that skills and knowledge transferred to students are current and relevant to what industry requires.
- A professional development plan for academic staff should be implemented.

The listed aspects should somehow be addressed in order for all staff members, and specifically the management team, to be part of the planning processes and the QA of the EATI in general.

Taking in consideration the possible recommendations to the identified important findings, an M&E tool have to be developed. The M&E tool has to integrate all aspects identified with the findings, start to address the challenges, add to information needed to develop an effective QA system as well as serve as an ongoing tool to track students.

As the bulk of the issues are related to governance with strong emphasis on customer satisfaction and inputs, the balanced scorecard (BSC) was proposed as the best tool. The theory of a BSC was discussed in chapter 3 where it was indicated that a BSC, enables managers to adjust their strategies and make changes by being able to monitor the implementation of interventions (Karathanos and Karathanos, 2005:222).

Karathanos and Karathanos (2005:229) furthermore indicated that measures within the BSC should be aligned to the organisation's strategic objectives. Within the EATI this would allow the tracking of student progress as well as improve the institution's capability to improve internal processes, as found to be a challenge at the institute.

The above benefits of the BSC, as described in chapter 3, are therefore suitable to address the challenges or issues identified by this research study. The detail of the BSC will be left to development by the EATI, but the proposed framework or model for such a tool is presented in table 5.1. The model is based on the Logic model as compiled by the researcher (figure 4.2) as well as on the issues identified based on the findings of this study. Umashankar and Dutta (2007: 64) proposed a BSC model for HE institutions in India, and this model, together with the template as developed by the DPME (RSA, 2012:1) were used as baseline.

It is therefore necessary to incorporate the EATI's mission and vision into the development of a BSC. The institution's vision and mission should form the basis for a BSC. As mentioned in chapter 1, the vision and mission of the EATI (EATI, 2013:3) are:

> **Mission:**
> To promote sound, integrated, managerial and skills training in agriculture with advanced specialisation in area-specific fields of excellence informed by industry and societal needs
> To provide quality, professional and practical training informed by contemporary research through a market orientated approach in a development context.

Vision:

The vision is the advancement of the EATI as an agricultural and educational centre of excellence to the benefit of the broader community.

The BSC as indicated by Umashankar and Dutta (2007: 64) consisted of four areas: stakeholder perspective, internal business perspective, innovation and business perspective, financial perspective. The areas evaluated by this study and also the areas indicated by the DPME templates (RSA, 2012:1), refer to the areas of internal business and innovation and business perspective only (table 5.1). The reason for this inclusion is because of the challenges identified, specifically by the management team of the EATI. The areas of "financial perspective" and "stakeholder perspective" are important, but refer to operational aspects and outside the scope of this study.

Table 5.1: Proposed BSC framework for the EATI

Component 1: Internal business perspective	
Objective	**Measures**
Centre of excellence	Maintenance of all facilities
Quality service delivery to external and internal clients	Responsiveness to enquiries
Quality assurance (QA)	Uphold education and agricultural standards

	Annual review of programme: internally Review of programme externally: HEQC
Component 2: Innovation and Learning perspective	
Objective	**Measures**
Staff motivation and development Technology transfer Resource management Industry partnerships	Staff development plan Availability of bursaries Contemporary research opportunities Focus on entrepreneurial practices

(Source: Author)

5.4 LIMITATIONS OF THE STUDY

The biggest limitation of the study was the fact that the student database of the EATI was not up to date with the contact detail of graduates. This not only limited the number of responses, but could also have had an influence on the employment findings of graduates. From a personal perspective and experience as a previous lecturer and faculty manager at the EATI, the researcher does not expect that the "satisfaction" findings would be significantly different.

The study was limited to the EATI and can therefore not be generalised to include other Agricultural Training Institutes in South Africa, but could be used as a model for such studies. Similar studies could however be conducted at the EATI to distinguish between the different HE qualifications within the HE programme.

5.5 FUTURE RESEARCH

This study was used to establish a baseline from which to conduct future research and studies. Recommendations were made regarding the implementation of a BSC as an M&E tool to aid with the QA system development and implementation. It would therefore be appropriate to conduct a follow-up study to evaluate the appropriateness of the suggested model and also the effectiveness of the BSC in practice. The BSC

should also be expanded to include all operational functions, to ensure that information is generated that could be used in future impact evaluations.

5.6 CONCLUSION

The research findings of this study indicated that the responding graduates are generally employed in the agricultural sector, irrespective of political classification. Also, the respondents as well as management participants are of the opinion that knowledge and skills gained at the EATI are sufficient to find employment within the agricultural sector. Although the response rate of 16% is low, the data gathered should be useful as baseline for similar future studies.

This study has also shown that a QA system with the use of active M&E is important, specifically for a government programme or intervention. It is important to ensure that taxpayers' money is spent responsibly and the best way to ensure this is the implementation and management of a QA system. Challenges with this study reiterated the importance of good record-keeping to ensure that beneficiaries of interventions are contactable when conducting impact evaluation of such interventions. The effective use of an M&E (QA) system would ensure the proper upkeep of such records.

Various recommendations stemming from the findings were made, but the most important aspect of this study was the opportunity of the management team to engage with the concepts of quality and QA. The BSC that was recommended should be used as a baseline for future M&E initiatives and an institutional culture of QA towards service excellence.

In conclusion, QA is perceived by many as a function of a special unit or person, but this study could serve as a starting point to include all staff members in the management of QA. The system and the success of an intervention are dependent on the acceptance and implementation of such recommendations as made in this study. The BSC, as recommended, could serve as a reference point to formalise a QA system with M&E as an integral part of the endeavour.

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APPENDIX A: Graduate Questionnaire

Wes-Kaapse Regering
Landbou

A training impact evaluation of the Higher Education Programmes: A case study of the Elsenburg Agricultural Training Institute

Graduate questionnaire

Section 1: Demographic information

1.1. Gender

Male	☐
Female	☐

1.2 Age

younger than 20 yrs	☐
21 – 25 yrs	☐
26 – 30 yrs	☐
31 – 35 yrs	☐
More than 36 yrs	☐

1.3 Race

(Needed for significant conclusion of study)

African	☐
Caucasian	☐
Coloured	☐
Indian	☐
Other	☐

1.4 Year of graduation

2009	☐
2010	☐
2011	☐
2012	☐
2013	☐

1

1.5 Experience in Agriculture prior to commencing studies at EATI

Less than 1 year	☐
1 to 2 years	☐
3 to 4 years	☐
5 to 6 years	☐
More than 6 years	☐

1.6 Current employment status

Permanent	☐
Fixed contract	☐
Self-employed: individual	☐
Self-employed: partnership	☐
Unemployed	☐
Further study without working	☐

1.7 What is your current job title/area?

Owner/CEO	☐
General/senior Manager	☐
Regional Manager	☐
Quality control/assurance	☐
Farm manager	☐
Extension officer	☐
Farm foreman	☐
Sales and marketing	☐
Distribution	☐
Other:Click here to enter text.	☐

1.8 Type of institution

Entrepreneur	☐
Industry: private	☐
Industry: NGO	☐
Government	☐
Other:Click here to enter text.	☐

1.9 Employment level

Management	☐
Middle-management	☐
Supervisory	☐
Assistant	☐
General worker	☐

1.10 Are you working in an area related to your studies?

Yes	☐
No	☐

1.11 Is the indicated job in **1.10** your first job after graduation?

Yes	☐
No	☐
Not applicable	☐

1.12 If answer to **1.10** or **1.11** was **No**, were you previously employed in an area related to your studies?

Yes	☐
No	☐

1.13 If answer to **1.12** was **Yes**, what is the reason for the shift outside your field of study?

Salary	☐
No permanent employment found	☐
Not interested anymore	☐
Contract ended	☐
Geographical area	☐
Other: Please indicate Click here to enter text.	☐

Section 2: Benefits of the programme (EATI)

2.1 What was your initial motivation to study at the EATI?

(You may indicate more than one answer)

Interested in Agriculture	☐
Did not get admission to another institution	☐
EATI was my only choice because of its good reputation	☐
EATI was my only choice because of my school academic marks	☐
Received a bursary	☐
Opportunity to improve economic situation at home/ for myself	☐
Other: Please indicate Click here to enter text.	☐

2.2 What, in your opinion, were the most significant benefits to you from your studies at the EATI?

(You may indicate more than one answer)

Increased skills and knowledge	☐
Readiness for the job market	☐
Gained industry contacts via programme interactions	☐
Gained new passion/interest in agriculture	☐
Other: Please indicate Click here to enter text.	☐

2.3 Which aspects of the programme at EATI were the most useful and valuable for you in your work?

(You may indicate more than one answer)

Training manuals/ notes	☐
Practical sessions	☐
Class/ theory contact sessions	☐
Technology transfer	☐
Other: Please indicate Click here to enter text.	☐

Section 3: Institutional evaluation

Below are a number of statements/questions regarding the Elsenburg Agricultural Training Institute (EATI). Please read each statement/question and indicate to what extent you agree or disagree with each statement.

Statement: The skills and knowledge acquired at EATI					
	Strongly Disagree	**Disagree**	**Uncertain/ no opinion**	**Agree**	**Strongly Agree**
1. Are sufficient to find employment in my study field	☐	☐	☐	☐	☐
2. Knowledge gained in the course are used in my current job	☐	☐	☐	☐	☐
3. Skills obtained in my course are used in my current job	☐	☐	☐	☐	☐
4. Are sufficient for further career opportunities (next-level promotion) in my current job	☐	☐	☐	☐	☐
5. More training is needed for employment in my job area of study	☐	☐	☐	☐	☐
6. I am satisfied that the EATI training is current and relevant	☐	☐	☐	☐	☐

Thank you for taking the time to complete this questionnaire.

S.B. Hendrikse

APPENDIX B: Management Questionnaire

Wes-Kaapse Regering
Landbou

A training impact evaluation of the Higher Education Programmes: A case study of the Elsenburg Agricultural Training Institute (EATI)

Management questionnaire (Key informants)

Section 1: Graduate employability

Below are a number of statements/questions regarding the graduates of the Elsenburg Agricultural Training Institute (EATI). Please listen to each statement/question and indicate to what extent you agree or disagree with each statement.

	Strongly Disagree	Disagree	Uncertain /no opinion	Agree	Strongly Agree
1. The skills and knowledge acquired at the EATI are sufficient to find employment in most study fields					
2. Skills and knowledge gained in the courses are current and relevant					
3. Skills and knowledge gained are sufficient for further career opportunities (next-level promotion)					
4. Study programmes are generally developed in cooperation with inputs from industry role-players					
5. I am satisfied that the EATI training is current and relevant					

1

Section 2: Quality and quality assurance

Below are a number of statements/questions regarding QA at the EATI. Please listen to each statement/question and indicate what your understanding of the question or statement is.

1. What is your general understanding of the term quality within the Higher Education (HE) environment?

2. What is your understanding of the term Quality assurance (QA) within the HE environment?

3. Are the terms of Quality and Quality assurance, as you defined, applicable to the EATI? If no, please explain.

The following questions are related to the Logic model derived from the vision and mission of the EATI (2013), as well as the stated outputs and outcomes related to Provincial and National Strategic Objectives and Outcomes

4. Does the EATI have a (QA) system that tracks progress with regard to the stated outcomes and impacts of the programme? If no, please explain how outcomes and impacts are measured.

5.1. Does the EATI have a QA system (M&E) that tracks and measures ongoing progress regarding programme implementation and possible remedial action should challenges/discrepancies be identified?

5.2. If the answer in **5.1** is no, do you think such a system should be in place? Briefly explain.

5.3. If the answer in **5.1** is yes, do you think the system is effective? Briefly explain.

6. What is your opinion regarding the stated outputs, outcomes and impacts of the EATI? Should it stay as it is, be revised or changed entirely? Please explain your answer.

Thank you for taking the time to complete this questionnaire.

S.B. Hendrikse

APPENDIX C: Participation Requests

Hendrikse, Shawn

From: Hendrikse, Shawn
Sent: 29 June 2016 04:09 PM
To:

Cc:
Subject: Elsenburg study

Importance: High

Good afternoon colleagues

I hope you are well?

Permission was granted by Mr. Paulse to conduct interviews with the management team of the EATI. The interviews are part of my MPA study regarding graduate employability and the effect of/need for Quality Assurance.

The interviews consists of a structured questionnaire with 5 multiple questions and 9 open-ended questions that should not take more than 30 minutes to complete.

Please indicate your willingness to participate and subsequently your availability if needed.

Thanking you in advance for your cooperation.

Regards,

Shawn Hendrikse
Assistant Director
Farmer Support and Development
Department of Agriculture
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Western Cape Government
BETTER TOGETHER

Be 110% Green. Read from the screen.

1

Hendrikse, Shawn

From: Hendrikse, Shawn
Sent: 05 July 2016 11:22 AM
Subject: Elsenburg study: Quality assurance
Attachments: Questionnaire Eng 2016.docx; Vraelys AFR 2016.docx

Importance: High

Good morning

You have been selected to participate in the Elsenburg study regarding Quality assurance. If this e-mail reaches the parents of previous students at Elsenburg, would you be so kind to send it to your son or daughter to complete?

Thank you for taking the time to complete this questionnaire. I can assure you that the information that you provide will only be used for statistical analysis and your personal details be kept confidential at all times.

The questionnaire is attached in English and Afrikaans. Please complete your preferred language form and send back to this e-mail address.

Thank you again for your participation. Your inputs could make a difference in the future of the college and agricultural training.

Regards,

Shawn Hendrikse
Assistant Director
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